Province of British Columbia
Ministry of Environment
Ministry of Lands, Parks and Housing

Outdoor Recreation Participation: Southeast Coal Block 1980

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Chapter One *Introduction*

1.1 Background to the Study

The Southeast Coal Block is located within the Kootenay Region of British Columbia, in the extreme southeastern corner of the Province. It consists of a nearly continuous belt of coal-bearing rock strata, extending from the international boundary approximately 160 kilometers north along the Continental Divide (Figure 1).

Commercial coal mining has been carried out in the Southeast Coal Block since the late 1800's. Considerable expansion of the area's coal-mining industry took place from the mid-1960's to the mid-1970's. This expansion resulted in significant impacts on the fish, wildlife, and outdoor recreation resources of the Coal Block, due to the effects of both an increasing human population and the mining operations themselves. The prospect of further impacts from a number of proposed coal mines resulted in the 1975 approval of a planning programme for the area by the Provincial Government's Environment and Land Use Committee.

The planning programme included an inventory of the resources of the area, conducted from 1975 to 1980, and a resource management plan for fish, wildlife, and outdoor recreation, which was initiated in 1979. The purpose of the resource management plan was to develop management strategies that would conserve fish and wildlife populations and maintain opportunities for outdoor recreation in the face of both increasing recreational demand and the direct impacts of mining and other resource development activities.

Figure 1
General Study Location

Early in the planning process, it was recognized that information concerning present levels of participation in outdoor recreation within the Southeast Coal Block area was deficient. As a result, it was decided to survey residents of the Coal Block communities to obtain that information. It was also felt desirable to determine the degree to which residents of adjacent areas spend recreational time in the Coal Block, thus residents of the neighbouring communities of Cranbrook and Kimberley were included in the survey. The purpose of the survey was to determine:

1. current levels of participation in outdoor recreation activities by Coal Block and Cranbrook and Kimberley residents;

2. the geographic distribution of that recreational use; and

3. the opinions of local residents on conservation and recreation management, including the level of satisfaction with fishing and hunting success, wildlife viewing opportunities, and available recreational facilities.

While the recreation survey was in progress, reorganization within the Provincial Government and the development of new resource planning thrusts forced the abandonment of the resource management plan as it was originally conceived. Presently, each of the Ministries of Lands, Parks and Housing; Environment, and Forests are preparing separate plans that will address, within the context of their broader resource management mandate, those aspects of outdoor recreation for which they are responsible. The results of the recreation survey will be one of the factors considered in the development of recreation and conservation programmes for the Southeast Coal Block area.

A cautionary note that must be stressed in the interpretation of the results of this study is that public surveys tend to slightly over-estimate levels of participation in activities. Off-setting this disadvantage, however, is the fact that public surveys provide one of the few means of soliciting public opinion.

1.2 Survey Methods

The data collection phase of the study consisted of two surveys: a telephone survey of Southeast Coal Block residents in the communities of Elkford, Elko, Sparwood and Fernie, and a mail survey of those same residents as well as residents of the nearby cities of Cranbrook and Kimberley. The telephone survey solicited information on Coal Block residents' participation in 22 selected outdoor recreation activities. The mail survey contained more detailed questions on participation in those 22 activities, and included specific questionnaires on fishing, hunting, and the non-hunting use of wildlife. Both surveys were administered in the Fall of 1980 by the Planning and Research Branch of the Parks and Outdoor Recreation Division, with the close cooperation of the Planning Branch of the Ministry of Environment.

Twenty percent of the households from the four Coal Block communities of Elkford, Elko, Sparwood and Fernie, and from the adjacent communities of Cranbrook and Kimberley were randomly selected to participate in the study. Of those Coal Block households that were contacted in the telephone survey, eighty-five percent agreed to answer questions. Of the completed telephone interviews, eighty-five percent were with households that had participated in outdoor recreation activities in 1980. Only the participating Coal Block households were sent the mail survey, and fifty-eight percent of those responded to it. As

previously noted, Cranbrook and Kimberley households received the mail survey without prior telephone contact. Thirty-nine percent of the households from those two communities returned completed questionnaires.

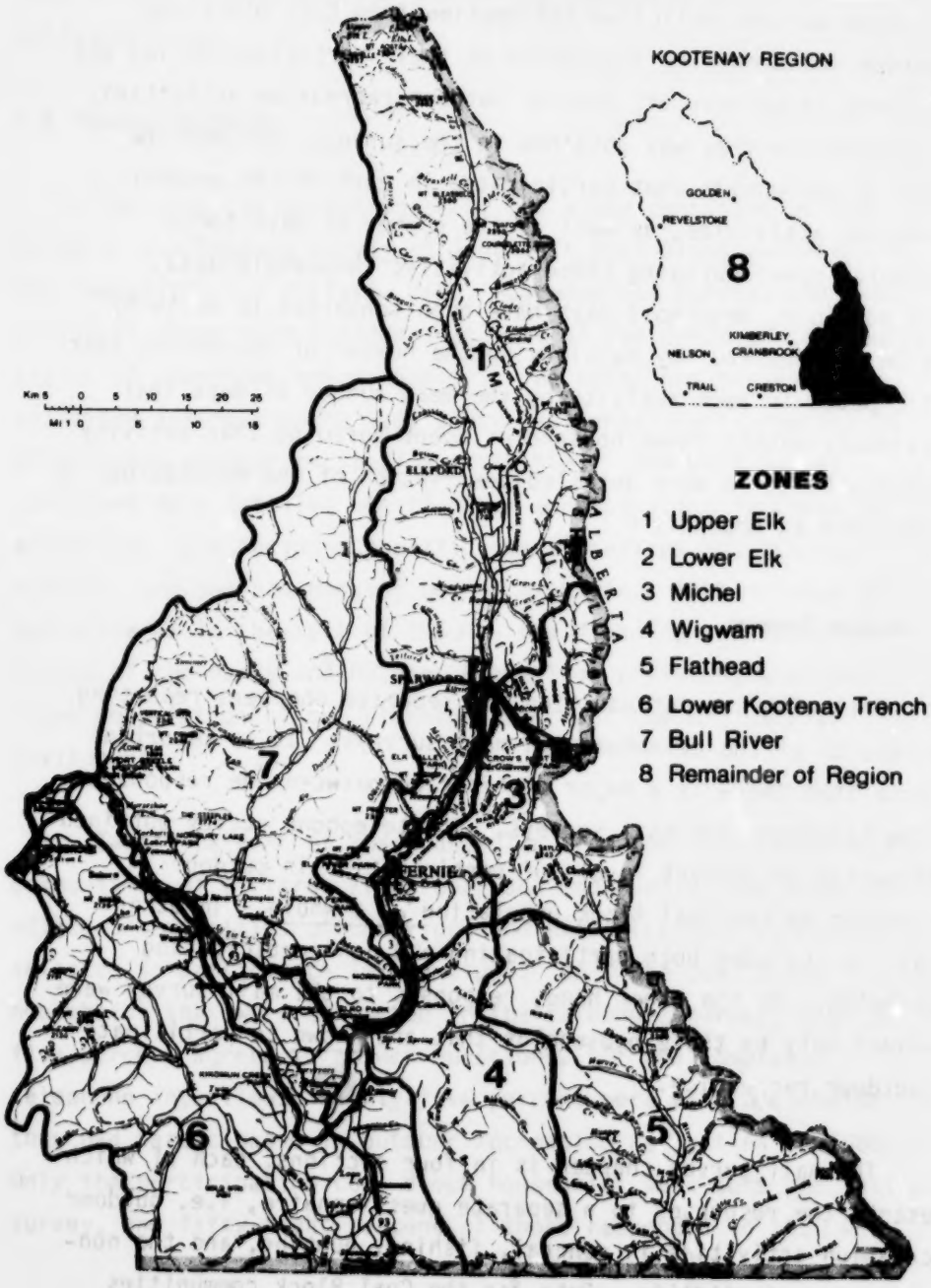
Both surveys solicited information from Coal Block and Cranbrook and Kimberley households on their participation in, and days spent in pursuit of, several outdoor recreation activities. The information that was obtained in the surveys included the number of households that participated in each of the outdoor recreation activities, as well as the number of days those households spent pursuing those activities (household days). Where possible, household days have been converted to activity days in the report, by multiplying the number of households that participated in each activity by the mean number of days that individuals within those households spent pursuing that activity (Appendix C.7). A more detailed description of the methodology is is included as Appendix C.

1.3 Report Format

Following the introduction are separate chapters reporting the results of the telephone and mail surveys. It is important to note that there is a major distinction between the responses to the telephone and mail surveys. The telephone survey obtained information on current levels of participation in outdoor recreation by the Coal Block population as a whole. In other words, it included both participating and non-participating households. On the other hand, responses to the mail survey were provided only by those households that are known to participate in outdoor recreation.

The mail survey chapter is in four sections, each of which presents the responses to a separate questionnaire, i.e. outdoor recreation activities in general, fishing, hunting, and the non-hunting use of wildlife. Data for the Coal Block communities

Figure 2
Key Zones Within the Kootenay Region



have been analysed and displayed separately from that for Cranbrook and Kimberley. Full response results are usually listed in tabular form, with graphs sometimes used to display frequency distributions. In some cases, the responses to two questions are combined to determine whether or not there is a relationship between them. In these instances, a question is first presented which addresses the relationship to be investigated, followed by the two questions being analysed.

A map was sent with the mail questionnaires, showing both the Kootenay Region and specific "zones" within that region (Figure 2). Zones 1 to 5 in Figure 2 comprise the Southeast Coal Block, Zone 6 (lower Kootenay trench) and Zone 7 (Bull River drainage) represent the areas immediately adjacent to the Coal Block, and Zone 8 comprises the remainder of the Kootenay Region. Both the region as a whole and the eight zones delineated within it are referred to throughout this report.

The results of the telephone survey and the four mail questionnaires are summarized at the end of each section. The appendices to the report include a glossary of terms, a description and critique of the survey methodology, as well as tables showing the confidence limits on the data that is presented.

Chapter Two *Telephone Survey*

2.1 Introduction

The telephone survey phase of the outdoor recreation participation study was designed to satisfy three objectives:

1. to quantify current participation in outdoor recreation by residents of the Southeast Coal Block, by determining

- household participation in outdoor recreation activities
- household days spent in outdoor recreation activities
- mean number of participants per household for each of 22 activities
- activity days spent in outdoor recreation activities by the Coal Block population

2. to determine what proportion of Southeast Coal Block households own selected types of recreational equipment.

3. to compare the participation patterns of long-term Coal Block residents with those of recent arrivals employed in the coal-mining industry.

The following chapter contains the questions that were asked in the telephone survey, and presents the results obtained for each. Appendix C.8 includes tables showing the confidence limits on the data that is presented. A critique of the telephone survey is provided in Appendix E.3.1.

2.2 Survey Results

1. ***What proportion of Coal Block households participated in outdoor recreation in 1980?***

In 1980, 85% of the households in the Southeast Coal Block participated in some form of outdoor recreation.

2. ***In which outdoor recreation activities did Coal Block households participate during 1980?***

Hunting or viewing wildlife, fishing, visiting the beach,and camping were the most popular activities in terms of the percentage of households in the population that participated in each. Approximately 60% of the households surveyed had taken part in at least one of these four activities. Winter activities were also popular: 43% of the households went tobogganing, 39% went downhill skiing, and 21% went snowmobiling. Table 1 lists the number and percentage of Coal Block households that participated in each of 23 activities in 1980. The percentage of residents in the Coal Block population that participated in each of those activities in 1980 is included in Table 8 at the end of this chapter.

Table 1
Household Participation in Outdoor Recreation Activities by Southeast Coal Block Residents, 1980

Activity	No. of Households Participated 1980	% of Households that Participated
1. Hunting or Viewing Wildlife	407	60.8%
2. Fishing	407	60.8%
3. Beach Visits	393	58.7%
4. Camping	388	58.0%
5. Tobogganing	290	43.3%
6. Downhill Skiing	263	39.3%
7. Four-wheel Driving	224	33.5%
8. Day Hiking	221	33.0%
9. Power-boating	163	24.4%
10. Snowmobiling	141	21.1%
11. Ice Fishing	135	20.2%
12. Canoeing	103	15.4%
13. Cross-country Skiing	102	15.2%
14. Snowshoeing	100	14.9%
15. Trailbiking	91	13.6%
16. Horseback Riding	85	12.7%
17. Overnight Hiking	70	10.5%
18. Waterskiing*	56	8.4%
19. Mountain Climbing	51	7.6%
20. Winter Camping	38	5.7%
21. Sailing	8	1.2%
22. Ski Touring	4	0.6%
23. Kayaking	3	0.4%
Sample Size (n=)		669

* number of activity days not determined

3. How many days in 1980 did Coal Block households participate in those activities?

Hunting or viewing wildlife, fishing, camping, four-wheel driving, and tobogganing were the five activities in which Southeast Coal Block households spent the greatest number of days participating in 1980.

Table 2 lists the total number of household days spent by the survey population in each activity. These range from 56 household days spent in ski-touring to 11,372 days spent hunting or viewing wildlife. The mean, or average, number of household days also varies considerably, ranging from 3.1 for overnight hiking to 36.7 for kayaking. The median, or mid point, and mode, or most frequently mentioned, number of household days are listed for comparison.

Table 2
Household Days Spent in Outdoor Recreation Activities by Southeast Coal Block Residents, 1980

Activity	Number of Household Days			
	Total	Mean	Median	Mode
1. Hunting or Viewing Wildlife	11,372	28.4	12.1	10.0
2. Fishing	8,333	20.5	10.3	2.0
3. Camping	6,620	17.1	12.4	14.0
4. Four-wheel Driving	6,608	29.8	12.3	50.0
5. Tobogganing	5,867	20.4	9.7	2.0
6. Downhill Skiing	4,977	19.1	12.3	10.0
7. Beach Visits	4,955	12.6	7.3	2.0
8. Trailbiking	3,011	33.8	14.8	2.0
9. Day Hiking	2,772	12.5	5.0	2.0
10. Snowmobiling	2,348	16.7	7.4	2.0
11. Cross-country Skiing	1,748	17.5	9.8	2.0
12. Power-boating	1,776	10.9	5.6	1.0
13. Horseback Riding	1,441	17.0	3.8	1.0
14. Ice Fishing	1,170	8.7	5.4	2.0
15. Canoeing	1,093	10.6	5.8	3.0
16. Snowshoeing	808	8.1	4.8	2.0
17. Winter Camping	398	10.5	3.5	2.0
18. Overnight Hiking	220	3.1	2.3	1.0
19. Mountain Climbing	212	4.2	2.4	1.0
20. Kayaking	110	36.7	35.0	5.0
21. Sailing	72	9.0	7.5	1.0
22. Ski Touring	56	14.0	11.0	4.0

4. *How many household members usually participated in each activity?*

Visiting the beach, camping, tobogganing, power boating, and canoeing were the five activities in which the greatest number of people per household participated, indicating that they are family-oriented activities. Mountain climbing, ski touring, and kayaking, on the other hand, usually involved only one or two participants per household. The mean number of participants per household for each activity is given in Table 3.

Table 3
Mean Number of Participants per Coal Block Household, for Each of Twenty-Two Outdoor Recreation Activities

Activity	Mean Number of Participants per Household
1. Beach Visits	3.2
2. Camping	3.0
3. Tobogganing	2.9
4. Power-boating	2.8
5. Canoeing	2.5
6. Sailing	2.4
7. Four-wheel Driving	2.3
8. Winter Camping	2.3
9. Snowmobiling	2.1
10. Day Hiking	2.0
11. Fishing	2.0
12. Hunting or Viewing Wildlife	2.0
13. Downhill Skiing	2.0
14. Cross-country Skiing	2.0
15. Horseback Riding	1.9
16. Overnight Hiking	1.7
17. Trailbiking	1.7
18. Ice Fishing	1.7
19. Snowshoeing	1.7
20. Mountain Climbing	1.6
21. Ski Touring	1.5
22. Kayaking	1.3

5. How many activity days were spent by the Southeast Coal Block population in each of those activities during 1980?

Hunting or viewing wildlife, camping, fishing, tobogganing, visiting the beach, and four-wheel driving were the activities in which residents spent the greatest number of days in 1980. Over 100,000 activity days* were spent in each of these six activities. The estimated number of days Coal Block residents spent in each of 22 outdoor recreation activities in 1980 is shown in Table 4.

* An "activity day" refers to one person participating in an activity for one day or a portion thereof, while a "household day" refers to one or more members of a household participating in an activity for one day or a portion thereof.

Table 4
Estimated Number of Days Spent in Outdoor Recreation Activities by Southeast Coal Block Residents

Activity	Mean Activity Days per Household*	Estimated Activity Days
1. Hunting or Viewing Wildlife	61.53	170,930
2. Camping	55.48	147,022
3. Fishing	41.84	116,232
4. Tobogganing	56.85	112,449
5. Beach Visits	40.58	108,567
6. Four-wheel Driving	68.15	104,338
7. Downhill Skiing	42.91	77,066
8. Day Hiking	25.46	38,394
9. Trailbiking	59.53	36,968
10. Snowmobiling	38.28	36,902
11. Power Boating	31.31	34,911
12. Horseback Riding	53.29	30,908
13. Cross-country Skiing	32.71	22,701
14. Canoeing	28.44	20,022
15. Ice Fishing	15.10	13,937
16. Snowshoeing	15.18	10,338
17. Winter Camping	26.39	6,861
18. Overnight Hiking	6.23	2,990
19. Mountain Climbing	6.41	2,224
20. Sailing	21.63	1,190
21. Kayaking	38.33	690
22. Ski Touring	17.50	473

*note that the mean activity days per person = $\frac{\text{mean activity days per household}}{\text{mean participants per household (Table 3)}}$

6. What proportion of households own each of several types of recreational equipment?

Table 5 shows the proportion of households in the survey population that owned selected types of recreational equipment. The proportion of households that both participated in, and owned the equipment for, a particular activity is shown in Table 6. For example, 23% of the households surveyed, or 70% of those households that went four-wheel driving, owned a four-wheel drive vehicle. While four-wheel drives were the most popular type of recreational equipment owned, a greater percentage (77%) of those who went trailbiking owned their own equipment.

Table 5
Ownership of Recreational Equipment by the Coal Block Population

Equipment Owned	No. of Households that Owned Equipment	% of Sample
4 Wheel Drive Vehicle	156	23%
Snowmobile	87	13%
Trail Bike	70	11%
Canoe	66	10%
Power-boat	65	10%
Sailboat	3	<1%
Kayak	2	<1%
Sample Size (n=)		669

Table 6
Ownership of Recreational Equipment by Participants

Equipment Owned	No. of Households that Owned Equipment	No. of Households that Participated in Activity	% of Participating Households
4-Wheel Drive Vehicle	156	224	70%
Snowmobile	87	141	62%
Trail Bike	70	91	77%
Canoe	66	103	64%
Power-boat	65	163	40%
Sailboat	3	8	38%
Kayak	2	3	67%

7. Do short-term residents employed in the coal-mining industry participate in different activities than long-term residents?

Table 7 compares the participation in each of the activities by short-term Southeast Coal Block residents (4 years or less) who have at least one member of their household employed in the coal-mining industry, with that of long-term residents (more than four years).

Only three activities showed a difference of more than 10%. About 31.6% of the long-term residents went power-boating in 1980, compared to 14.9% of the short-term residents (a difference of 16.7%), 28.0% of long-term residents went ice fishing, compared to 15.8% of short-term residents (a difference of 12.2%), and 35.5% of long-term residents went day hiking, compared to 46.5% of short-term residents (a difference of 11%).

Table 7
Participation in Outdoor Recreation Activities by Length of Residency and Coal-Mining Employment

Activity	% of Short-term Residents (4 years or less) Employed in Coal Industry Who Participated	% of Long-term Residents (more than 4 years) Who Participated
Hunting/Viewing Wildlife	71.3%	73.3%
Fishing	63.4%	72.5%
Beach Visits	63.4%	71.0%
Camping	64.4%	68.4%
Tobogganing	51.5%	49.1%
Downhill Skiing	39.6%	48.8%
Four-wheel Driving	33.7%	41.1%
Day Hiking	46.5%	35.5%
Power-boating	14.9%	31.6%
Ice Fishing	15.8%	28.0%
Snowmobiling	21.8%	26.2%
Snowshoeing	15.8%	19.3%
Canoeing	13.9%	18.0%
Trailbiking	14.9%	17.0%
Horseback Riding	16.8%	14.1%
Overnight Hiking	13.9%	12.6%
Waterskiing	5.9%	11.1%
Mountain Climbing	9.9%	7.7%
Winter Camping	5.0%	7.5%
Sailing	0.0%	1.5%
Kayaking	1.0%	0.5%
Ski-Touring	1.0%	0.5%
Sample Size (n=)	101	389

2.3 Summary of Findings

Table 8 summarizes Southeast Coal Block residents' 1980 participation in each of twenty-two outdoor recreation activities. The mean number of participants per household, the percentage of households and residents that participated, the mean number of activity days per household, and the estimated total number of activity days for each of those activities are listed in the table.

Hunting or viewing wildlife, camping, fishing, tobogganing, and visiting the beach were the five activities in which both the highest proportion of the Southeast Coal Block population participated, and in which the greatest number of activity days were spent, in 1980.

Four-wheel drive vehicles, snowmobiles, and trailbikes were the three most popular types of recreational equipment owned.

The participation rates for only three activities (power-boating, ice fishing, and day hiking) differed by more than 10% between long-term Coal Block residents and recent arrivals employed in the coal-mining industry. Power-boating and ice fishing were more popular with long-term residents, and day hiking was more popular with the more recently settled residents.

Table 8
Summary of 1980 Participation in Outdoor Recreation Activities by Southeast Coal Block Residents

Activity	Mean participants per household	Percentage of households that participated	Percentage of residents in the population that participated	Mean activity days per household†	Estimated activity days
Hunting/Viewing Wildlife	2.0	60.8%	38.0%	61.53	170,930
Camping	3.0	58.0%	54.4%	55.48	147,022
Fishing	2.0	60.8%	38.0%	41.84	116,232
Tobogganing	2.9	43.3%	39.2%	56.85	112,449
Beach Visits	3.2	58.7%	58.7%	40.58	108,567
Four-wheel Driving	2.3	33.5%	24.1%	68.15	104,338
Downhill Skiing	2.0	39.3%	24.6%	42.91	77,066
Day Hiking	2.0	33.0%	20.6%	25.46	38,394
Trailbiking	1.7	13.6%	7.2%	59.53	36,968
Snowmobiling	2.1	21.1%	13.8%	38.28	36,902
Power-boating	2.8	24.4%	21.4%	31.31	34,911
Horseback Riding*	1.9	12.7%	7.5%	53.29	30,908
Cross-country Skiing	2.0	15.2%	9.5%	32.71	22,701
Canoeing	2.5	15.4%	12.0%	28.44	20,022
Ice Fishing	1.7	20.2%	10.7%	15.10	13,937
Snowshoeing	1.7	14.9%	7.9%	15.18	10,338
Winter Camping*	2.3	5.7%	4.1%	26.39	6,861
Overnight Hiking	1.7	10.5%	5.6%	6.23	2,990
Mountain Climbing	1.6	7.6%	3.8%	6.41	2,224
Sailing*	2.4	1.2%	0.9%	21.63	1,190
Kayaking*	1.3	0.4%	0.2%	38.33	690
Ski Touring*	1.5	0.6%	0.3%	17.50	473
Sample Size (n=)		669			

†note that the mean activity days per person = $\frac{\text{mean activity days per household}}{\text{mean participants per household}}$

*due to the low response rates for these activities, extreme caution should be used in interpreting these results (Appendix C.8).

Chapter Three *Mail Survey*

3.1 Outdoor Recreation

Upper Elk Lake *Courtesy of Tourism B.C.*

3.1.1 Introduction

The outdoor recreation questionnaire was designed to satisfy four objectives:

1. to quantify participation in several outdoor recreation activities within and immediately adjacent to the Southeast Coal Block by Coal Block and Cranbrook/Kimberley residents, by determining

- household participation in 22 selected outdoor recreation activities and number of household days for the five most important activities
- distribution of household days and sites visited most often within the Kootenay Region for the five most important outdoor recreation activities
- number of household nights spent camping in the Kootenay Region at each of four types of sites
- most popular camping locations

2. to assess residents' attitudes towards present recreation management in the Kootenay Region, by determining

- opinions concerning the need for additional campgrounds or improvements to existing sites
- reactions to crowding of favourite recreation areas within the Kootenay Region
- present conflicts between recreational activities in the Kootenay Region

3. to anticipate the potential effect of closure of the Lodgepole/Harvey access road (resulting from the proposed development of the Sage Creek coal mine) on recreational use of the Flathead area, by determining

- present recreational use of the Flathead area
- present use of the Lodgepole/Harvey road
- adjustments residents would make if the road was closed

4. to determine characteristics of the households surveyed, that is

- household description and composition
- membership in outdoor recreation organizations

The following chapter lists each question as it appeared in the questionnaire, and reports the findings of each. In some cases, the responses to two questions are combined to determine whether or not there is a relationship between them. In these instances, a question is first presented which addresses the relationship to be investigated, followed by the two questions being analysed. It is important to note that the questionnaire results are based on the responses from residents who participated in outdoor recreation in 1980. The geographic areas referred to in this chapter are shown in Figure 2. A critique of the questionnaire is provided in Appendix E.3.2.

Usable outdoor recreation questionnaires were returned from 332 Coal Block households and 455 Cranbrook/Kimberley households. These figures represent the base sample sizes for this chapter. The sample sizes presented with each question are often less than the base sample sizes, due to non-responses and/or unusable responses. Appendix C.8 includes tables showing the confidence limits on the data presented. Note that the sample sizes accompanying some questions are quite small, thus caution should be used in interpreting those results.

3.1.2 Questionnaire Results

1. (a) Please circle the letter opposite each activity in which members of your household have participated.

The five most popular activities for both Coal Block and Cranbrook/Kimberley households known to participate in outdoor recreation, in terms of the number of households that participated in each, were camping, fishing, visiting the beach, viewing wildlife, and hunting. Table 9 lists the percentage of participating households in the study populations that spent recreational time in each of 22 outdoor recreation activities.

Table 9
Participation in Outdoor Recreation Activities by Households Known to Pursue Those Activities

Activity	Percentage of Households that Participated	
	Coal Block	Cranbrook/Kimberley
Camping	81.5%	78.9%
Fishing	78.8%	76.7%
Beach Visits	63.4%	54.8%
Viewing Wildlife	58.5%	48.9%
Hunting	50.8%	46.0%
Day Hiking	46.8%	43.0%
Downhill Skiing	42.8%	38.5%
Tobogganing	37.8%	22.9%
Off-road Four-wheel Driving	35.7%	20.9%
Snowmobiling	26.8%	14.5%
Cross-country Skiing	26.5%	34.6%
Power-boating	26.2%	24.2%
Canoeing	25.5%	25.1%
Snowshoeing	20.6%	13.0%
Mountain Climbing	16.3%	13.0%
Trailriding (Horseback)	25.1%	10.6%
Trailbiking	14.8%	9.5%
Overnight Hiking	14.2%	17.2%
Winter Camping	8.3%	9.0%
Ski-touring	3.1%	6.4%
Sailing	2.2%	4.6%
Kayaking	1.5%	1.3%
Sample Size (n=)	325	454

1. (b) Rank the five activities most important to members of your household.

The five activities considered to be most important to participating Coal Block and Cranbrook/Kimberley households were similar to those indicated in 1(a), that is, camping, fishing, visiting the beach, hunting, and viewing wildlife. Table 10 lists the percentage of households in the study populations that considered each of the 22 activities to be one of the five most important to them.

Table 10
Activities Considered One of the Five Most Important to Participating Household Members

Activity	Percentage of Households that Participated	
	Coal Block	Cranbrook/Kimberley
Camping	81.5%	78.9%
Fishing	78.8%	76.7%
Beach Visits	63.4%	54.8%
Viewing Wildlife	58.5%	48.9%
Hunting	50.8%	46.0%
Day Hiking	46.8%	43.0%
Downhill Skiing	42.8%	38.5%
Tobogganing	37.8%	22.9%
Off-road Four-wheel Driving	35.7%	20.9%
Snowmobiling	26.8%	14.5%
Cross-country Skiing	26.5%	34.6%
Power-boating	26.2%	24.2%
Canoeing	25.5%	25.1%
Snowshoeing	20.6%	13.0%
Mountain Climbing	16.3%	13.0%
Trailriding (Horseback)	25.1%	10.6%
Trailbiking	14.8%	9.5%
Overnight Hiking	14.2%	17.2%
Winter Camping	8.3%	9.0%
Ski-touring	3.1%	6.4%
Sailing	2.2%	4.6%
Kayaking	1.5%	1.3%
Sample Size (n=)	325	454

1. (c) Indicate the number of days in the past year members of your household participated in each of the activities you ranked 1 to 5.

In both the Coal Block communities and Cranbrook/Kimberley, the five activities in which households spent the greatest number of days participating in 1980 were camping, fishing, viewing wildlife, hunting, and downhill skiing.

Table 11 lists the mean and total number of household days spent in each activity by those households that ranked the activity as one of the five most important to them.

Table 11
Household Days Spent in Activities Considered One of the Five Most Important to Participating Household Members

Activity	Coal Block			Cranbrook/Kimberley		
	Sample Size* (n=)	Mean household days**	Number of household days***	Sample Size* (n=)	Mean household days**	Number of household days***
Camping	225	22.0	4,950+	316	22.4	7,078+
Fishing	209	22.7	4,744+	285	21.0	5,985+
Viewing Wildlife	119	31.8	3,784+	139	25.7	3,572+
Hunting	134	24.3	3,256+	168	20.6	3,461+
Downhill Skiing	98	22.3	2,185+	131	25.9	3,393+
Beach Visits	150	13.8	2,070	179	13.0	2,327
Day Hiking	82	20.6	1,689+	111	15.6	1,732+
Off-road Four-wheel Driving	64	26.2	1,677+	47	15.0	705
Snowmobiling	46	20.3	934+	40	18.4	736+
Cross-country Skiing	52	14.5	754	101	16.8	1,697+
Tobogganing	52	12.6	655	33	7.6	251
Trailbiking	21	28.2	592+	27	21.7	586+
Power-boating	38	13.5	513	52	19.4	1,009+
Canoeing	39	8.9	347	60	10.6	636
Mountain Climbing	16	20.0	320	19	9.8	186
Overnight Hiking	24	10.5	252	34	12.4	422
Trailriding (Horseback)	17	10.6	180	25	26.4	660+
Snowshoeing	16	7.6	122	13	8.8	114
Winter Camping	4	15.3	61	8	5.5	44
Ski-touring	3	8.7	26	12	10.6	127
Sailing	2	4.0	8	12	11.4	137
Kayaking	0	0.0	0	1	12.0	12

*Sample Size - number of households that both ranked an activity as one of the five most important to them and indicated the number of days they spent in that activity.
**Mean household days - mean number of days spent in an activity by the households in the sample size.
***Number of household days - number of days spent in each activity by those households that ranked that activity as one of the five most important to them. The symbol "+" indicates the figure given represents an underestimate of household days. (see Appendix E.5, point 3). All of the household day figures are likely underestimates, because they exclude the days generated by those households that participated in an activity but did not rank it in the top five, as well as the days spent by the households that ranked an activity as one of the five most important to them but did not indicate the number of days they participated in it.

2. (a) *For each of the activities ranked 1 to 5 in Question 1, please indicate the number of days you participated in each activity in the Kootenay Region (Zones 1–7 plus Zone 8) and in each of the eight zones.*

Note: Because of the way in which this question is presented, the responses cited in Table 12 only reflect a portion of the total sample.

For Example: In the Coal Block

- 265 households indicated that they participated in camping (from Q.1)
- 237 of the 265 households ranked camping as one of their five most important activities (from Q.1)
- 169 of the 237 households said they camped in the Kootenay Region (from Q.2)
- 161 of the 169 households stated the number of days they camped in each zone (from Q.2)

The information concerning the Coal Block campers in Table 12 is based only on the 161 households.

The activities in which the greatest number of days were spent in the Kootenay Region, by the households that ranked each as one of the five most important to them, were fishing, camping, hunting, viewing wildlife, and downhill skiing. Coal Block households spent most of their time participating in outdoor recreation activities within the Coal Block area, although they spent over 25% of their time fishing, camping, visiting the beach, power-boating and canoeing in the lower Kootenay trench and Bull River drainage (Zones 6 and 7). Cranbrook and Kimberley households spent most of their time participating in outdoor recreation outside the Coal Block, primarily in Zone 8 (Table 12).

Table 12
Household Days Spent in Outdoor Recreation Activities in the Kootenay Region, by Zone, for the Activities Considered One of the Five Most Important to Household Members

I COAL BLOCK

Activity	Sample Size* (n=)	Number of Household Days in Region	Percentage of Household Days in each Zone							
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Fishing	143	3,551	26.6	18.1	9.0	7.1	8.1	17.1	7.9	6.2
Camping	161	2,764	15.7	5.8	4.0	3.3	7.3	28.0	23.4	12.6
Hunting	96	2,580	27.8	13.7	21.6	7.8	13.1	8.1	6.7	1.3
Viewing Wildlife	82	2,347	34.0	23.8	11.4	6.3	5.6	7.8	9.6	1.5
Downhill Skiing	74	1,428	24.6	66.1	1.1	0.6	1.1	0.6	2.6	3.3
Beach Visits	107	1,225	4.7	3.2	3.9	0.5	0.2	34.6	36.9	16.0
Off-road Four-wheel Driving	41	1,181	27.5	18.4	12.1	6.1	22.3	6.8	6.1	0.8
Day Hiking	62	1,044	48.9	19.9	12.5	1.6	3.0	4.5	8.8	0.7
Snowmobiling	33	626	15.8	18.4	24.4	2.1	21.4	1.0	16.9	
Cross-country Skiing	44	564	50.0	30.7	2.3			5.0	8.0	4.1
Tobogganing	29	411	24.6	55.5	0.5	4.4	1.2	2.9	9.7	1.2
Power-boating	27	347	1.1	9.8			1.2	29.7	22.2	36.0
Trailbiking	13	235	46.4	38.7		4.3	4.3	6.4		
Overnight Hiking	17	214	61.7	1.9	14.0	1.4	6.1	7.0	2.3	5.6
Mountain Climbing	11	205	52.7	2.9	19.5		1.0	2.9	20.5	0.5
Snowshoeing	14	115	48.7	25.2	24.3	0.9	0.9			
Canoeing	23	111	18.0	11.7	5.4	1.8		19.8	10.8	32.4
Trailriding (Horseback)	6	84	76.2	11.9		11.9				
Winter Camping	4	71	87.3	9.9						2.8
Sailing	1	30		66.7	33.3					
Ski-touring	2	9		33.3					66.7	
Kayaking	0	0								

*Sample Size - number of households that ranked an activity as one of the five most important to them in Question 1, participated in that activity in the Kootenay Region, and indicated the number of days they participated in that activity in zones within the region.

II CRANBROOK/KIMBERLEY

Activity	Sample Size* (n=)	Number of Household Days in Region	Percentage of Household Days in each Zone							
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Fishing	191	3,715	1.7	1.2	0.6	4.0	3.9	15.6	16.7	56.4
Camping	199	3,745	2.5	0.7	0.4	3.6	3.9	15.0	16.1	57.9
Hunting	122	2,604	3.6	0.4	0.2	2.0	4.8	15.5	27.0	46.5
Viewing Wildlife	90	1,590	2.5	2.8	2.1	3.0	1.8	9.7	25.5	52.6
Downhill Skiing	85	2,073	4.3	2.1	1.0			11.9	4.8	75.9
Beach Visits	120	1,531	0.7	0.1		0.4	0.8	17.7	22.6	57.7
Off-road Four-wheel Driving	26	360	6.7		1.1	7.2	1.9	28.1	19.7	35.3
Day Hiking	72	1,015	13.1	1.0		10.0	1.5	5.9	21.0	47.5
Snowmobiling	22	389						28.5	11.8	59.6
Cross-country Skiing	72	1,119	2.2	1.2		2.3	1.2	19.7	9.1	64.3
Tobogganing	18	112						48.2	10.7	41.1
Power-boating	32	577						12.5	15.3	72.3
Trailbiking	14	220		4.5				40.0	2.3	53.2
Overnight Hiking	23	285	6.3			1.8		7.7	20.4	63.9
Mountain Climbing	9	67							29.9	70.1
Snowshoeing	9	78						17.9		82.1
Canoeing	36	397		5.5			1.0	8.3	27.7	57.4
Trailriding (Horseback)	14	346				2.6		40.2	2.3	53.2
Winter Camping	6	31						9.7	38.7	51.6
Sailing	5	42						7.1	4.8	88.1
Ski-touring	12	190						12.6	4.2	83.2
Kayaking	1	12						16.7	16.7	66.7

*Sample Size - number of households that ranked an activity as one of the five most important to them in Question 1, participated in that activity in the Kootenay Region, and indicated the number of days they participated in that activity in zones within the region.

2. (b) Please indicate the names of sites you visited most often.

_____

Coal Block households most often visited sites in Zone 6 for camping, Zone 1 for fishing, Zone 6 for visiting the beach, Zones 1 and 2 for both hunting and viewing wildlife, and Zones 2 and 8 for downhill skiing. Cranbrook/Kimberley households visited sites in Zone 8 most often for all of these activities (Table 13)

Table 13
Kootenay Region Zones Visited Most Often for the Six Most Popular Activities (in Terms of the Number of Households Participating in Each)

I COAL BLOCK

Activity	Sample Size (n=)	Percentage of Households that Chose Sites in Each Zone							
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Camping	131	12.9	5.8	0.7	3.0	3.8	40.4	17.5	16.0
Fishing	120	45.0	8.3	5.8	5.8	4.2	17.5	7.5	5.8
Beach Visits	91	7.7	1.1	1.1			64.8	18.7	6.6
Hunting	56	28.6	23.2	12.5	5.4	16.1	5.4	8.9	
Viewing Wildlife	57	24.6	33.3	7.0	1.8	7.0	12.3	8.8	5.3
Downhill Skiing	67	13.4	31.3				1.5	7.5	46.3

II CRANBROOK/KIMBERLEY

Activity	Sample Size (n=)	Percentage of Households that Chose Sites in Each Zone							
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Camping	150	2.0	0.7		0.7	2.0	14.6	23.3	56.7
Fishing	144	3.5			0.7	0.7	17.4	22.9	54.9
Beach Visits	111					0.9	6.3	9.0	83.8
Hunting	85	2.4			1.2	3.5	14.1	24.7	54.1
Downhill Skiing	100		3.0				2.0	6.0	89.0
Viewing Wildlife	55					1.8	16.4	34.5	47.3

3. Please indicate the number of nights members of your household camped in the Kootenay Region at each of the following types of sites in the past year.

In both the Coal Block and Cranbrook/Kimberley study populations, approximately 40% of the total nights spent camping were at undeveloped sites.

Of the Coal Block households that indicated they had gone camping in the Kootenay Region, the most popular type of site chosen was undeveloped, followed by Provincial Parks, B.C. Forest Service sites, and private campgrounds. In Cranbrook/Kimberley, however, Provincial Parks were slightly more popular than undeveloped sites, followed by B.C. Forest Service sites and private campgrounds (Table 14).

Table 14
Nights Camped in Kootenay Region, by Type of Site

I Coal Block

Type of Site	% of Camping Households	% of Household Nights	Mean Household Nights
Undeveloped sites	64.0%	40.5%	12.6
Private campgrounds	32.0%	18.0%	11.3
B.C. Forest Service sites	46.8%	22.3%	9.5
Provincial Parks	48.8%	19.1%	7.8
Total	*	100.0%	
Sample Size (n=)	250	4,995	

II Cranbrook/Kimberley

Type of Site	% of Camping Households	% of Household Nights	Mean Household Nights
Undeveloped sites	65.0%	40.9%	13.0
Private campgrounds	30.9%	12.3%	8.2
B.C. Forest Service sites	39.5%	17.3%	9.0
Provincial Parks	65.9%	29.5%	9.2
Total	*	100.0%	
Sample Size (n=)	337	6,949	

* Percentages do not equal 100% because several households camped in more than one type of site.

Over 40% of the camping households from both populations went exclusively to one of the four types of sites (Table 15).

Table 15
Households that Camped Exclusively at One Type of Site

Type of Site	Percentage of Camping Households	
	Coal Block	Cranbrook/Kimberley
Undeveloped sites only	19.6%	18.6%
Private campgrounds only	6.0%	5.9%
B.C. Forest Service sites only	8.8%	4.4%
Provincial Parks only	8.0%	12.4%
Total	42.4%	41.3%
Sample Size (n=)	250	337

Does the number of nights spent camping at different types of sites in the Kootenay Region vary between different types of households?

15. Description of household: family, couple, single person, or friends.

versus

3. Number of nights in the past year that household members camped in the Kootenay Region at each of four types of sites.

Coal Block families and couples spent approximately one-third of their time camping at undeveloped sites, one-quarter at each of B.C. Forest Service sites and Provincial Parks, and the remainder at private campgrounds. Cranbrook/Kimberley families and couples also spent approximately one-third of their time at undeveloped sites, but camped more often in Provincial Parks than in B. C. Forest Service sites. Table 16 shows the percentage distribution of time spent camping at each of four types of sites by four types of households.

Table 16
Household Composition by Nights Spent at Different Types of Sites

I Coal Block

Type of Site	Family	Couple	Single Person	Friends
Undeveloped sites	32.0%	33.3%	57.1%	27.3%
Private campgrounds	17.8%	14.1%	9.5%	18.2%
B.C. Forest Service sites	24.8%	25.6%	19.0%	9.1%
Provincial Parks	25.3%	26.9%	14.3%	45.5%
Total	100.0%	100.0%	100.0%	100.0%
Sample Size (n=)	359	78	21	11

II Cranbrook/Kimberley

Type of Site	Family	Couple	Single Person	Friends
Undeveloped sites	33.9%	31.7%	44.4%	47.1%
Private campgrounds	16.2%	17.7%	11.1%	5.9%
B.C. Forest Service sites	20.9%	20.1%	14.8%	17.6%
Provincial Parks	28.9%	30.5%	29.6%	29.4%
Total	100.0%	100.0%	100.0%	100.0%
Sample Size (n=)	401	164	27	17

4. Where do the members of your household camp most often?

Of the households that go camping, 67% from the Coal Block communities and 94% from Cranbrook and Kimberley do so outside the Coal Block area (Zones 1 to 5).

Table 17
Zones Camped in Most Often

Zone	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
1. Upper Elk	12.7%	2.4%
2. Lower Elk	8.3%	1.0%
3. Michel	1.7%	0.3%
4. Wigwam	3.1%	0.7%
5. Flathead	7.4%	2.0%
6. Lower Kootenay Trench	34.9%	8.8%
7. Bull River	14.8%	18.5%
8. Rest of Region	13.5%	65.7%
9. Outside Region	3.5%	0.7%
Total	100.0%	100.0%
Sample Size (n=)	229	297

Coal Block households camped most often in Zone 6, particularly at Kikomun Creek Provincial Park, while Cranbrook/Kimberley residents camped most often in Zone 8, particularly at Whiteswan Lake Provincial Park (Table 18).

Table 18
Five Sites Camped at Most Often

I Coal Block

Site	Percentage of Households that Responded
1. Kikomun Creek Provincial Park	17.5%
2. Loon Lake Provincial Park	5.7%
3. Flathead and area	4.8%
4. Elk River	4.4%
5. Elk Valley	3.5%
Total	35.9%
Sample Size (n=)	229

II Cranbrook/Kimberley

Site	Percentage of Households that Responded
1. Whiteswan Lake Provincial Park	14.8%
2. Premier Lake	11.8%
3. Moyie Lake	5.7%
4. Bull River	5.7%
5. St. Mary's Lake and Wasa Provincial Park	4.7% 4.7%
Total	47.4%
Sample Size (n=)	297

5. ***Do members of your household think additional campgrounds are needed or any existing sites need improvement? If yes, where?***

_____

Coal Block households felt that both additional campgrounds and improvements to existing sites are needed most in Zone 1, while Cranbrook/Kimberley households felt that sites in Zone 8 require the most attention. Tables 19 and 20 list the zones and/or sites where residents thought additional campgrounds should be provided and where improvements to existing sites are needed, respectively.

Table 19
Zones Where Additional Campgrounds are Needed

Zone Requiring Additional Campgrounds	Percentage of Households that Responded*	
	Coal Block	Cranbrook/Kimberley
1	46%	-
2	18%	-
3	3%	-
4	-	-
5	-	-
6	18%	6%
7	13%	14%
8	3%	80%
Total	100%	100%
Sample Size (n=)	39	35

*Note the small sample sizes

Table 20
Areas Where Existing Sites Need to be Improved

I Coal Block

Areas requiring improvement	Percentage of households that responded
Zone 1	34.5%
Zone 1 in general	3.6%
Blue Lake	0.9%
Conner Lake	0.9%
Elk Lake Park	0.9%
Fording Mtn. Hotsprings	0.9%
Grave Lake	9.1%
Elk River	10.9%
Elkford and area	3.6%
Sparwood and area	3.6%
Zone 2	10.0%
Zone 2 in general	2.7%
Elk Valley Park	1.8%
Morrisey Park	0.9%
Mt. Fernie Park	1.8%
Fernie and area	2.7%
Zone 3	3.6%
Crowsnest Park	1.8%
Corbin and area	1.8%
Zone 4	3.6%
Zone 4 in general	1.8%
Wigwam River	1.8%
Zone 5	6.4%
Zone 5 in general	4.5%
Flathead camp	0.9%
Harvey Creek	0.9%
Zone 6	19.1%
Zone 6 in General	1.8%
Edwards Lake	1.8%
Kikomun Creek Provincial Park	1.8%
Lake Koocanusa	7.3%
Loon Lake	6.4%
Zone 7	13.6%
Zone 7 in general	2.7%
Bull River	2.7%
Rock Creek and Lake	0.9%
Tie Lake	6.4%
Wapiti	0.9%
Zone 8	9.1%
Zone 8 in general	4.5%
Whiteswan Lake Provincial Park	0.9%
Premier Lake Provincial Park	0.9%
Wasa Lake Provincial Park	0.9%
Radium	0.9%
Kootenay Lake	0.9%
Total	100.0%
Sample Size (n=)	110

II Cranbrook/Kimberley

Areas requiring improvement	Percentage of households that responded
Zone 2	1.2%
Hartley Lake	1.2%
Zone 4	1.2%
Ram Creek	1.2%
Zone 5	1.2%
Flathead and area	1.2%
Zone 6	8.1%
Zone 6 in general	2.3%
Edwards Lake	2.3%
Kikomun Creek Provincial Park	1.2%
Cranbrook and area	2.3%
Zone 7	9.3%
Bull River	1.2%
Norbury Lake Provincial Park	4.7%
Rock Creek and Lake	2.3%
Top-of-the World Park	1.2%
Zone 8	79.1%
Zone 8 in General	16.3%
Jimsmith Lake Provincial Park	1.2%
Moyie Lake Provincial Park	10.5%
Whiteswan Lake Provincial Park	18.6%
St. Mary's Lake Provincial Park	4.7%
Wasa Lake	3.5%
Kootenay Lake	1.2%
Windermere	2.3%
Larchwood	1.2%
Premier Lake Provincial Park	19.8%
Total	100.0%
Sample Size (n=)	86

6. ***What would the members of your household do if their favourite, most frequently visited, recreation areas in the Kootenays were used more often by other people?***

The majority of both Coal Block and Cranbrook/Kimberley respondents indicated they would go elsewhere if their favourite recreation areas were used more often by others (Table 21). However, only a small percentage indicated where they would go.

Table 21
Response to Crowding of Favourite Recreation Areas

Response	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Do nothing	32.0%	30.2%
Go elsewhere	65.0%	65.6%
Take up other activities	3.0%	4.2%
Total	100.0%	100.0%
Sample Size (n=)	306	378

Of those Coal Block households that did indicate an alternate location, 61.5% chose sites in Zone 1 (Upper Elk). Cranbrook/Kimberley households, on the other hand, chose alternate locations in several zones (Table 22). Only a small percentage of the respondents indicated they would take up other activities. The alternate activities mentioned included hiking, golfing, photographing, and staying at home.

Table 22
Alternate Locations to Crowded Sites

Zone	Number of Households that Chose Alternate Locations*	
	Coal Block	Cranbrook/Kimberley
1. Upper Elk	24	4
2. Lower Elk	0	0
3. Michel	1	2
4. Wigwam	1	0
5. Flathead	3	6
6. Lower Kootenay Trench	1	1
7. Bull River	3	4
8. Rest of region	6	5
Sample Size (n=)	39	22

* Due to the small sample sizes, the number of households that chose alternate locations is provided rather than the percentage of households.

7. Have you or other members of your household ever experienced recreation conflicts in the Kootenay Region? Please state where (zone number) and when each conflict occurred.

The most frequently mentioned recreation conflicts were camping versus camping, power-boating versus fishing, and cross-country skiing versus snowmobiling. Coal Block residents experienced the first two conflicts most often in Zone 6 and the cross-country skiing versus snowmobiling conflict most often in Zone 1, while Cranbrook/Kimberley residents encountered all three conflicts most frequently in Zone 8 (Table 23).

Table 23
Recreation Conflicts in the Kootenay Region

I Coal Block

Conflict	No. of Hshlds. that Responded	No. of Hshlds. that Stated Zone	Percentage of Households that Stated Zone Number							
			Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Camping vs. Camping	21	14	14.3					57.1	14.3	14.3
Camping vs. Hunting	1	1							100.0	
Camping vs. Trailbiking	3	1							100.0	
Power-boating vs. Camping	1	1						100.0		
Power-boating vs. Power-boating	1	1						100.0		
Power-boating vs. Beach Visits	4	4							100.0	
Power Boating vs. Fishing	18	15	13.3					33.3	26.7	26.7
Day Hiking vs. Hunting	3	2	50.0						50.0	
Day Hiking vs. Trailbiking	2	2	50.0	50.0						
Fishing vs. Fishing	3	3	33.3	33.3				33.3		
Fishing vs. Snowmobiling	1	1						100.0		
Hunting vs. Hunting	2	0								
Hunting vs. Viewing Wildlife	1	1	100.0							
Hunting vs. Trailbiking	1	1		100.0						
Hunting vs. 4-Wheel Driving	1	1	100.0							
Viewing Wildlife vs. Trailbiking	1	1	100.0							
Viewing Wildlife vs. 4-Wheel Driving	2	1	100.0							
Trailbiking vs. Fishing	1	0								
4-Wheel Driving vs. Fishing	1	0								
Downhill Skiing vs. Downhill Skiing	2	1	100.0							
Cross-Country Skiing vs Snowmobiling	15	10	50.0	30.0	10.0					10.0
Snowmobiling vs. Day Hiking	1	1			100.0					
Snowmobiling vs. Viewing Wildlife	2	2	50.0						50.0	
Snowmobiling vs. Tobogganing	2	2	50.0	50.0						
Total	90	66	19	7	2			17	14	7

II Cranbrook/Kimberley

Conflict	No. of Households that Responded	No. of Households that Stated Zone	Percentage of Households that Stated Zone Number*		
			Zone 6	Zone 7	Zone 8
Camping vs. Camping	38	19	21.1	21.1	57.8
Camping vs. Trailbiking	5	4	25.0	50.0	25.0
Sailing vs. Power-boating	2	2			100.0
Power-boating vs. Power-boating	2	2			100.0
Power-boating vs. Beach Visits	18	15		6.7	93.3
Power-boating vs. Fishing	33	20		10.0	90.0
Beach Visits vs. Beach Visits	1	1			100.0
Beach Visits vs. Fishing	1	1			100.0
Day Hiking vs. Trailbiking	6	5		40.0	60.0
Fishing vs. Camping	1	1			100.0
Fishing vs. Fishing	4	2			100.0
Fishing vs. Snowmobiling	1	1		100.0	
Hunting vs. Camping	1	1	100.0		
Hunting vs. Hunting	1	0			
Hunting vs. Trailbiking	1	1		100.0	
Hunting vs. Cross Country Skiing	1	1	100.0		
Hunting vs. Snowmobiling	1	1			100.0
Viewing Wildlife vs. Trailbiking	1	1			100.0
Trailriding vs. Trailbiking	1	1	100.0		
Trailbiking vs. Beach Visits	1	1		100.0	
4-Wheel Driving vs. Day Hiking	1	1			100.0
4-Wheel Driving vs. Trailriding	1	0			
Cross-country Skiing vs. Snowmobiling	20	16	25.0	6.3	68.7
Snowmobiling vs. Viewing Wildlife	1	0			
Snowmobiling vs. Trailbiking	1	0			
Snowmobiling vs. Tobogganing	1	0			
Total	145	97	12	15	70

*Cranbrook and Kimberley households did not experience any recreation conflicts in Zones 1 to 5.

8. Do members of your household ever recreate in Zone 5, the Flathead area?

Almost half of the Coal Block respondents and approximately one-fifth of the Cranbrook/Kimberley respondents spent recreational time in the Flathead area (Table 24). Use of the Flathead area, by place of residence, is shown in Table 25.

Flathead River *Courtesy of B.C. Ministry of Environment*

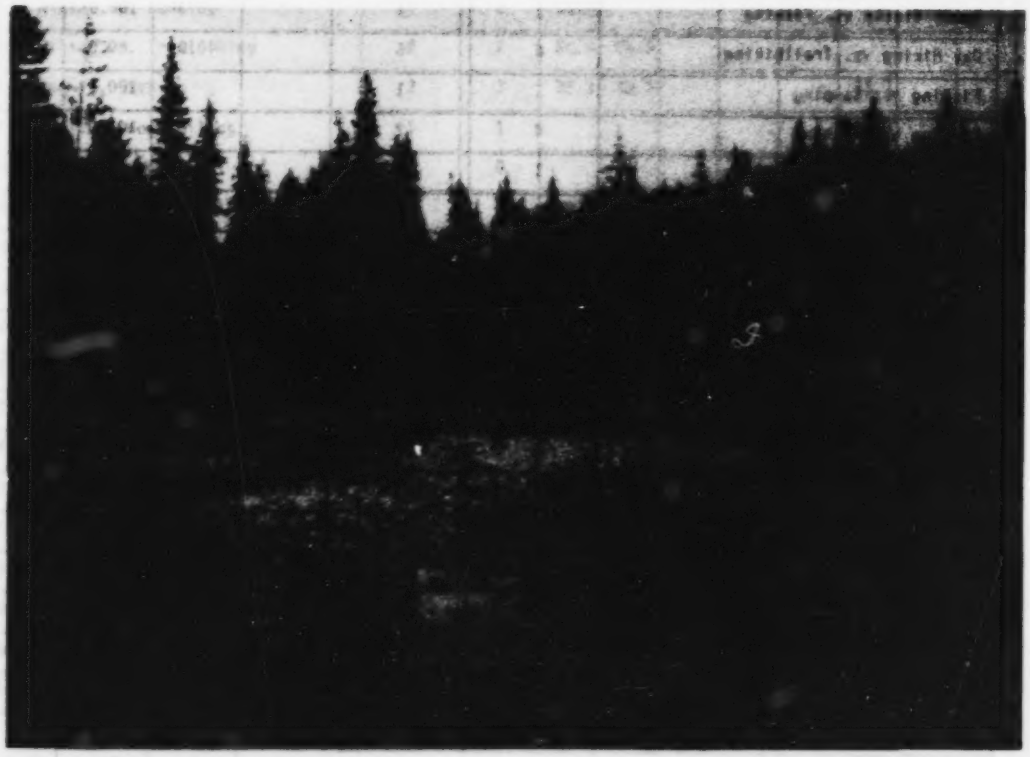


Table 24
Recreational Use of Zone 5, the Flathead Area

Recreate in Zone 5	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Yes	47.6%	20.5%
No	52.4%	79.5%
Total	100.0%	100.0%
Sample Size (n=)	328	420

Table 25
Recreational Use of Zone 5, the Flathead Area, by Place of Residence

Coal Block		Cranbrook/Kimberley	
Community	% of Households that Used Area	Community	% of Households that Used Area
Elkford	5.8%	Cranbrook	68.6%
Elko	5.1%	Kimberley	31.4%
Fernie	51.3%		
Sparwood	37.8%		
Total	100.0%	Total	100.0%
Sample Size (n=)	156	Sample Size (n=)	86

9. Are your present visits usually day trips or overnight trips?

Table 26 displays the percentage of households from each of the communities within the two survey populations that chose a particular type of visit to the Flathead as being their most common. Most of the households from the Coal Block communities, with the exception of Elko, usually visited the Flathead area on day trips. More Cranbrook households usually made day trips, while the majority of Kimberley households usually made overnight trips.

Table 26
Type of Recreational Visit to the Flathead Area, by Place of Residence

I Coal Block

Type of Visit	Percentage of Households that Responded				
	Elkford	Elko	Fernie	Sparwood	Coal Block
Day trips	66.7%	25.0%	83.1%	75.0%	76.0%
Overnight trips	33.3%	75.0%	16.9%	25.0%	24.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Sample Size (n=)	9	8	77	56	150

II Cranbrook/Kimberley

Type of Visit	Percentage of Households that Responded		
	Cranbrook	Kimberley	Cranbrook/Kimberley
Day trips	54.5%	36.0%	48.8%
Overnight trips	45.5%	64.0%	51.2%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	55	25	80

10. Do you use the Lodgepole/Harvey road to get into the Flathead area?

Most of the households from the Coal Block communities, with the exception of Sparwood, used the Lodgepole/Harvey road for access to the Flathead area. In both Cranbrook and Kimberley, 84% of the households that recreated in the area used this access route (Table 27).

Table 27
Use of the Lodgepole/Harvey Road for Access to the Flathead Area, by Place of Residence

I Coal Block

Use Road	Percentage of Households that Responded				
	Elkford	Elko	Fernie	Sparwood	Coal Block
Yes	66.7%	100.0%	96.3%	49.1%	77.3%
No	33.3%	0.0%	3.7%	50.9%	22.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Sample Size (n=)	9	8	80	57	154

II Cranbrook/Kimberley

Use Road	Percentage of Households that Responded		
	Cranbrook	Kimberley	Cranbrook/Kimberley
Yes	84.2%	84.0%	84.1%
No	15.8%	16.0%	15.9%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	57	25	82

11. Would the members of your household continue to recreate in the Flathead area if the Lodgepole/Harvey access road was closed?

Table 28 shows the percentage of households from each of the communities in the two survey populations that would continue to recreate in the Flathead area if the Lodgepole/Harvey access road was closed. Over half of the respondents from all communities but Fernie would continue to use the area.

Table 28
Continuation of Recreational Use of the Flathead Area if the Lodgepole/Harvey Access Road was Closed, by Place of Residence

I Coal Block

Continue Use	Percentage of Households that Responded				
	Elkford	Elko	Fernie	Sparwood	Coal Block
Yes	83.3%	62.5%	39.7%	70.4%	50.9%
No	16.7%	37.5%	60.3%	29.6%	49.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Sample Size (n=)	6	8	73	27	114

II Cranbrook/Kimberley

Continue Use	Percentage of Households that Responded		
	Cranbrook	Kimberley	Cranbrook/Kimberley
Yes	53.2%	52.4%	52.9%
No	46.8%	47.6%	47.1%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	47	21	68

12. How would you get there?

Corbin Road was the most commonly chosen alternate route for Coal Block residents to gain access to the Flathead area, while Corbin Road and Cabin Pass were chosen most often by Cranbrook/Kimberley residents (Table 29).

Table 29
Alternate Routes to the Flathead Area

Route	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Corbin Road	52.7%	32.3%
Cabin Pass, Bighorn Creek Road, Ram Creek	12.7%	29.0%
Wigwam	5.5%	0.0%
Coal Creek	1.8%	3.2%
Other routes*	7.3%	16.1%
Alternate means of transport**	20.0%	19.4%
Total	100.0%	100.0%
Sample Size (n=)	55	31

* "Other routes" included:
- "through the bush"
- "other entrances, or make your own road"
- "other routes"
- "look for other access"
- "Lodgepole/Harvey"
- "on the closed access road or any other possible route"
- "best maintained road"
- "use 4 x 4 roads"

** "Alternate means of transport" included:
- "Four-wheel drive"
- "on horseback"
- "snowmobile"

13. Would you stay longer once there?

Most households in both survey populations that indicated they would use an alternate route to gain access to the Flathead area would not stay longer once there (Table 30).

Table 30
Length of Stay in the Flathead Area by Those Households that Would Use an Alternate Route for Access

Would stay longer	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Yes	39.6%	45.5%
No	60.4%	54.5%
Total	100.0%	100.0%
Sample Size (n=)	53	33

14. Where would you go instead?

Table 31 lists alternate recreational areas to the Flathead, provided by those households that would not continue to go there if the Lodgepole/Harvey road was closed.

Table 31
Alternate Recreational Areas to the Flathead

I Coal Block

Alternate Recreational Area	Number of Households that Responded*
Zone 1 in general	1
Fording Mountain Hotsprings	1
Elk River	3
Hartley Lake	1
Coal Creek	1
Zone 3 in general	1
Wigwam River	4
Zone 6 in general	1
Cherry Lake	1
Gold Creek	2
17 - Mile Lake	1
Zone 7 in general	1
Bull River	7
Zone 8 in general	1
Kootenay National Park	1
Slocan	1
Sample Size (n=)	28

*Due to the small sample size, the number of households that chose alternate areas is presented, rather than the percentage of households.

II Cranbrook/Kimberley

Alternate Recreational Area	Number of Households that Responded*
Wigwam River	2
Zone 6 in general	3
Gold Creek	1
Bull River	4
Wildhorse River	1
Zone 8 in general	3
Whiteswan Lake Provincial Park	1
St. Mary's Lake	1
Sample Size (n=)	16

*Due to the small sample size, the number of households that chose alternate areas is presented, rather than the percentage of households.

15. What best describes your household: family, couple, single person, friends?

Table 32 displays the distribution of household types in the two survey populations. Approximately 91% of the households responding consisted of families or couples. A greater percentage of households in the Coal Block survey population consisted of families, while a greater percentage of Cranbrook/Kimberley households consisted of couples.

Table 32
Household Description

Description	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Family	72.7%	59.6%
Couple	17.8%	31.1%
Single Person	7.1%	7.0%
Friends	2.5%	2.3%
Total	100.0%	100.0%
Sample Size (n=)	326	428

16. Please indicate the number of people in each age group living in your household.

Table 33 displays the household composition of survey respondents, by both sex and age group. In the Coal Block, 73% of the householders were under 35 years of age, compared to 65% in Cranbrook/Kimberley. A comparison of these household characteristics with 1976 census data for the survey populations is provided in Appendix E.6.

Table 33
Household Composition, by Sex and Age Group

I Coal Block

	9 years and under	10-14 years	15-19 years	20-34 years	35-64 years	65 years and over	Total	Sample Size (n=)
Females	24.0%	9.7%	8.7%	33.2%	23.7%	0.7%	100.0%	578
Males	21.8%	9.0%	9.2%	30.3%	27.9%	1.7%	100.0%	587
Total	22.9%	9.4%	8.9%	31.8%	25.8%	1.2%	100.0%	
Sample Size (n=)	267	109	104	370	301	14		1165

II Cranbrook/Kimberley

	9 years and under	10-14 years	15-19 years	20-34 years	35-64 years	65 years and over	Total	Sample Size (n=)
Females	16.5%	11.7%	7.5%	29.0%	30.6%	4.7%	100.0%	656
Males	18.1%	9.6%	8.8%	28.1%	30.0%	5.3%	100.0%	736
Total	17.3%	10.6%	8.2%	28.5%	30.3%	5.0%	100.0%	
Sample Size (n=)	241	148	114	397	422	70		1392

17. Do any members of your household belong to organized outdoor recreation groups? If yes, please indicate which ones.

The percentage of Coal Block and Cranbrook/Kimberley households that belonged to each of several outdoor recreation groups is shown in Table 34. Approximately 40% of Coal Block and 26% of Cranbrook/Kimberley households had one or more members who belonged to at least one outdoor recreation organization. Of those households that had a member of at least one outdoor recreation group, 65% from the Coal Block and 59% from Cranbrook/Kimberley belonged to the B.C. Wildlife Federation.

Table 34
Membership in Outdoor Recreation Groups

I Coal Block

Organization	% of Total Households
B. C. Wildlife Federation	14.5%
Sparwood and District Fish and Wildlife Association	10.5%
Fernie and District Rod and Gun Club	6.3%
Elkford Rod and Gun Club	3.9%
Elk Valley Mountaineers	1.5%
Elk Valley 4 x 4 Mountain Cats	0.9%
Cranbrook and District Rod and Gun Club	0.6%
Elk Valley Racing Team	0.6%
Elk Valley Recreation Council	0.3%
Silver Tip Cross-country Ski Club	0.3%
The Pass Muzzle Loaders	0.3%
Other groups	0.6%
Total	40.4%
Sample Size (n=)	332

II Cranbrook/Kimberley

Organization	% of Total Households
B. C. Wildlife Federation	11.0%
Kimberley Wildlife Club	9.0%
Cranbrook and District Rod and Gun Club	2.6%
Outdoor Recreation Council of B. C.	1.1%
Four-wheel Drive Associaton of B. C.	0.9%
Elk Valley 4 x 4 Mountain Cats	0.2%
Fernie and District Rod and Gun Club	0.2%
Other groups	0.9%
Total	25.9%
Sample Size (n=)	455

3.1.3 Summary of Findings

Fishing, camping, hunting, viewing wildlife, and downhill skiing were the five activities in which Coal Block and Cranbrook/Kimberley households spent the greatest number of days during 1980.

Within the Kootenay Region, Coal Block households spent most of their time participating in outdoor recreation activities in the Coal Block area, although they spent at least 25% of their time fishing, camping, visiting the beach, power boating, or canoeing in the lower Kootenay Trench and Bull River drainage (Zones 6 and 7). Cranbrook/Kimberley households spent most of their time participating in outdoor recreation in Zone 8 (Kootenay Region excluding the Coal Block, lower Kootenay trench, and Bull River).

Coal Block households most often visited sites in Zone 6 (lower Kootenay trench) for camping, Zone 1 (upper Elk) for fishing, Zone 6 for visiting the beach, Zones 1 and 2 (lower Elk) for both hunting and viewing wildlife, and Zones 2 and 8 (rest of region) for downhill skiing. Cranbrook/Kimberley households visited sites in Zone 8 most often for all of these activities.

Approximately 40% of the total nights spent camping by Coal Block and Cranbrook/Kimberley households were at undeveloped sites.

Of the households that go camping, 67% from the Coal Block communities and 94% from Cranbrook and Kimberley do so outside the Coal Block area. Coal Block households camped most often in Zone 6, particularly at Kikomun Creek Provincial Park, while Cranbrook and Kimberley residents camped most often in Zone 8, particularly at Whiteswan Lake Provincial Park.

Coal Block households felt that both additional campgrounds and improvements to existing sites are needed most in Zone 1, while Cranbrook/Kimberley households felt that sites in Zone 8 require the most attention.

The majority of both Coal Block and Cranbrook/Kimberley respondents indicated they would go elsewhere if their favourite recreation areas became more crowded.

The three recreation conflicts experienced most frequently by both Coal Block and Cranbrook/Kimberley households were between campers, between power-boaters and anglers, and between cross-country skiiers and snowmobilers.

Almost half of the Coal Block respondents and approximately one-fifth of the Cranbrook/Kimberley respondents spent recreational time in the Flathead area.

Over 77% of Coal Block households and 84% of Cranbrook/Kimberley households that visited the Flathead area used the Lodgepole/Harvey road for access.

About half of the households that indicated they used the Flathead area stated they would continue to do so if the Lodgepole/Harvey access road was closed.

Approximately 91% of the households that responded consisted of families or couples. In the Coal Block, 73% of the householders were under 35 years of age, compared to 65% in Cranbrook/Kimberley.

Approximately 40% of Coal Block households and 26% of Cranbrook/Kimberley households had members who belonged to at least one outdoor recreation organization.

3.2 Fishing

Whiteswan Lake *Courtesy of Tourism B.C.*

3.2.1 Introduction

The fishing questionnaire was designed to satisfy three objectives:

1. to quantify current participation in recreational fishing within and immediately adjacent to the Southeast Coal Block by Coal Block and Cranbrook/Kimberley residents, by determining

- number of anglers in population
  - licensed
  - unlicensed
- temporal and spatial distribution of angler use
  - angling days inside and outside of B.C.
  - angling days, stream fishing and lake fishing, in the Kootenay Region
  - angler participation by geographic area (zone) within the region, zone preference, and breakdown of fishing type by zone
  - angler participation by species, by month within the region
  - most common type of fishing trip in the region

2. to assess anglers' attitudes towards present fisheries management in the Kootenay Region, by determining

- reasons for fishing in the Kootenay Region
- satisfaction with the fishing regulations
- frequency with which anglers catch their daily limit
- reaction to a decline in fishing success

3. to assess anglers' attitudes towards future fisheries management in the Kootenay Region, by determining

- species preferred for fisheries habitat restoration and enhancement
- responsibility for funding restoration and enhancement projects, and suggestions for ways to raise funds
- fisheries management options preferred for harvest control

The following chapter lists each question as it appeared in the fishing questionnaire, and reports the findings of each. In some cases, the responses to two questions are combined to determine whether or not there is a relationship between them. In these instances, a question is first presented which addresses the relationship to be investigated, followed by the two questions being analysed. It is important to note that the questionnaire results are based on responses from the residents in the study populations who fished in 1980. The geographic areas referred to in this chapter are shown in Figure 2. Appendix C.8 includes tables showing the confidence limits on the data that is presented. A critique of the questionnaire design is provided in Appendix E.3.2.

Usable fishing questionnaires were returned from 228 Coal Block households and 354 Cranbrook/Kimberley households. These figures represent the base sample sizes for this chapter. The sample sizes presented with each question are often less than the base sample sizes, due to non-responses and/or unusable responses. Note that the sample sizes accompanying some questions are quite small, thus caution should be used in interpreting those results.

3.2.2 Questionnaire Results

1. How many members of your household fished in the past year?

Forty-five percent of the residents of the Coal Block communities and of Cranbrook and Kimberley fished in 1980. Table 35 shows the mean, or average, number of anglers in each household and the estimated number of anglers in each study population.

Table 35
Estimated Number of Anglers

Coal Block	
estimated number of households that fished	2,821*
x mean number of anglers per household	2.286
= estimated number of anglers in the population	6,649
÷ total Coal Block population	14,620
x 100	
= percentage of population that fished	45%
Cranbrook/Kimberley	
estimated number of households that fished	4,558*
x mean number of anglers per household	2.271
= estimated number of anglers in the population	10,351
÷ total Cranbrook/Kimberley population	22,886
x 100	
= percentage of population that fished	45%

*See Appendix, C 19(a) for an explanation of how the number of households that fished was derived.

2. How many of the anglers of your household are 15 years of age or younger?

In the Coal Block, 36% of the anglers, or 2,394 people, were unlicensed (under 16 years of age) in 1980. In Cranbrook/ Kimberley, 31% of the anglers, or 3,209 people, were unlicensed (Table 36).

Table 36
Unlicensed Anglers as a Percentage of Total Anglers

Coal Block	(n = 519)	36%
Cranbrook/Kimberley	(n = 804)	31%

3. *How many days in the past year did the anglers of your household fish inside and outside of British Columbia?*

Coal Block and Cranbrook/Kimberley anglers spent most of their time fishing in British Columbia in 1980 (93% and 97% of their total angling days, respectively). The number of days they fished inside and outside B.C. is shown in Table 37.

Table 37
Estimated Angling Days, Inside and Outside B.C.

	Coal Block			Cranbrook/Kimberley		
	mean angling days per household	number of angling households*	estimated number of angling days**	mean angling days per household	number of angling households*	estimated number of angling days**
Inside B.C.	60	224 (98%)	164,959 (93%)	52	343 (97%)	228,334 (97%)
Outside B.C.	24	39 (17%)	11,542 (7%)	21	27 (8%)	7,629 (3%)
Total			176,501			235,963
Sample Size (n=)		228			354	

* as some households fished both inside and outside B.C. the sum of the percentages given is greater than 100.

** mean number of angling days per household x estimated number of households that fished = projected number of angling days by the population.

eg. Coal Block

mean angling days per household inside B.C. (59.509) x estimated number of households that fished inside B.C. (2,772) = estimated number of angling days inside B.C. by the Coal Block population (164,959 days).

For a more complete explanation of the methods by which activity days were calculated, refer to Appendix C.7.

4. *How many days in the past year did the anglers of your household go lake fishing and stream fishing in the Kootenay Region?*

Coal Block anglers spent more time stream fishing than lake fishing in the Kootenay Region in 1980, whereas Cranbrook/Kimberley anglers spent more time lake fishing. The number of days Coal Block and Cranbrook/Kimberley anglers spent lake fishing and stream fishing in 1980 is shown in Table 38.

Table 38
Estimated Angling Days, Lake Fishing and Stream Fishing, in the Kootenay Region

	Coal Block			Cranbrook/Kimberley		
	mean angling days per household	number of angling households*	estimated number of angling days**	mean angling days per household	number of angling households*	estimated number of angling days**
Lake Fishing	31	125 (58%)	50,350 (32%)	38	261 (82%)	142,068 (64%)
Stream Fishing	47	172 (80%)	106,114 (68%)	28	204 (64%)	81,211 (36%)
Total, *** Kootenay Region			156,464			223,279
Sample Size (n=)		214			320	

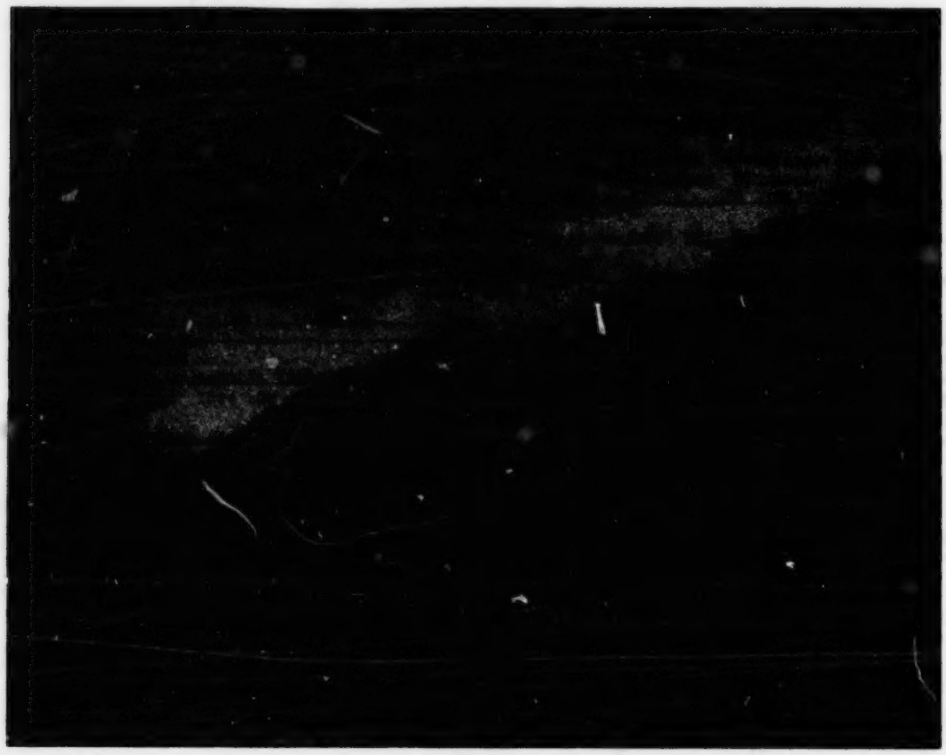
* as some households went both lake and stream fishing in the Kootenay region in 1980, the sum of the percentages given is greater than 100.

** mean number of angling days per household x estimated number of households that fished = estimated number of angling days by the population. For a more complete explanation of the methods by which activity days were calculated, refer to Appendix C.7.

*** Note that the total angling days, Kootenay Region, differ between Questions 4 and 5. This discrepancy is due to a differential response to the two questions.

The difference in the proportion of days spent lake fishing versus stream fishing in the two samples is probably related to the angling opportunities available in the two areas. The Coal Block contains only one large, relatively accessible lake (Grave Lake) for general fishing. Conversely, the majority of the 35 low elevation lakes immediately outside the Coal Block (ie. in Zones 6 and 7) are accessible.

Grave Lake *Courtesy of B.C. Ministry of Environment*



5. How many days in the past year did the anglers of your household fish in Zones 1–5 and how many days in Zones 6–8?

Coal Block and Cranbrook/Kimberley anglers generally stayed close to home to fish. The number of days those anglers spent fishing in Zones 1 to 5 and Zones 6 to 8 is shown in Table 39.

The total days Coal Block anglers fished in the Kootenay Region were 91% of the total days they fished within British Columbia. The total days fished in the region by Cranbrook/Kimberley anglers were 90% of the total days they fished in the province.

Table 39
Estimated Angling Days, Zones 1 to 5 and Zones 6 to 8

	Coal Block			Cranbrook/Kimberley		
	mean angling days per household	number of angling households*	estimated number of angling days**	mean angling days per household	number of angling households*	estimated number of angling days**
Zones 1 to 5	48	173 (81%)	108,710 (73%)	33	82 (26%)	38,231 (19%)
Zones 6 to 8	29	107 (50%)	41,064 (27%)	44	265 (83%)	166,798 (81%)
Total, *** Kootenay Region			149,774			205,029
Sample Size (n=)		214			320	

* as some households went fishing both in Zones 1 to 5 and Zones 6 to 8, the sum of the percentages given is greater than 100.

** mean number of angling days per household x estimated number of households that fished = estimated number of angling days by the population. For a more complete explanation of the methods by which activity days were calculated, refer to Appendix C.7.

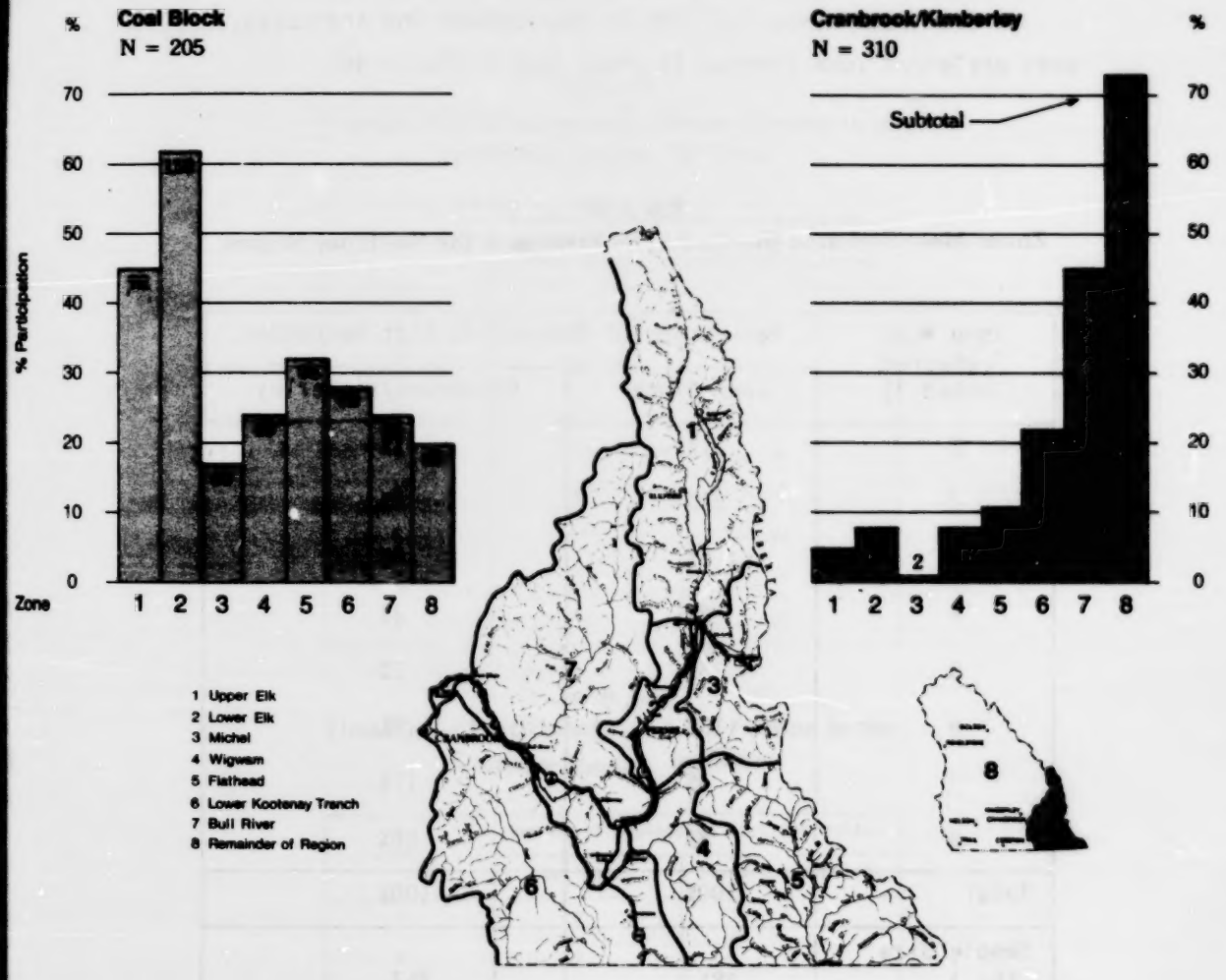
*** Note that the total angling days, Kootenay Region, differ between Questions 4 and 5. This discrepancy is due to a differential response to the two questions.

6. (a) Please circle the zone(s) in which the anglers of your household fish.

The highest proportion of Coal Block anglers fished in Zone 2, followed by Zones 1 and 5. Most of the Cranbrook/Kimberley anglers fished in Zone 8, followed by Zones 7 and 6 (Figure 3). Since Coal Block and Cranbrook/Kimberley anglers generally fished close to home (Question 5), it can be assumed that most Cranbrook/Kimberley anglers who fished in Zone 8 did so within that part of the zone which is in the East Kootenay Region.

The proportion of anglers who fished in each zone does not necessarily represent the fishing pressure in those zones. For example, although an angler may have indicated that he fished in a particular zone, the majority of his angling days may have been spent in one or more of the other zones. The number of angling days spent in each of the eight zones in the Kootenay Region is not known.

Figure 3
Household Participation in Fishing in the Kootenay Region, by Zone



6. (b) *Next, rank the zones in which you most prefer to fish (1 = most preferred).*

The zones most preferred for fishing corresponded well with those zones in which the highest proportion of anglers fished. Of the Coal Block anglers who indicated a most preferred zone (ranked 1), 31% chose Zone 2 and 27% chose Zone 1. In Cranbrook/Kimberley, 66% of the anglers who indicated a most preferred zone (ranked 1) chose Zone 8 (Table 40).

Table 40
Zones Most Preferred (Ranked 1) for Fishing in the Kootenay Region

Zone Most Preferred (Ranked 1)	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
1	27%	1%
2	31%	2%
3	6%	0%
4	8%	3%
5	5%	2%
6	10%	9%
7	4%	17%
8	8%	66%
Total	100%	100%
Sample Size (n=)	181	257

6. (c) *For each of the zones in which you fish, please circle whether you usually stream fish or lake fish.*

Coal Block and Cranbrook/Kimberley anglers generally stayed close to home to stream fish (Table 41). Most lake fishing was done in Zones 6 to 8 by both Coal Block and Cranbrook/Kimberley anglers, due to the better lake fishing opportunities in those zones (Table 42).

Table 41
Household Participation in Stream Fishing in the Kootenay Region, by Zone

Zone	Number of Households that Responded	
	Coal Block	Cranbrook/Kimberley
1	72	7
2	109	19
3	32	0
4	43	18
5	56	25
6	14	30
7	28	85
8	8	67

Table 42
Household Participation in Lake Fishing in the Kootenay Region, by Zone

Zone	Number of Households that Responded	
	Coal Block	Cranbrook/Kimberley
1	8	4
2	4	1
3	0	0
4	2	2
5	1	5
6	37	33
7	13	39
8	27	132

7. *Why do you fish in the Kootenay Region?*

The majority of Coal Block and Cranbrook/Kimberley anglers fished in the Kootenay Region because it is their place of residence (it is close to home).

Table 43
Reasons for Fishing in the Kootenay Region

Reasons for Fishing	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Place of Residence	66%	65%
Best Fishing Region	13%	10%
Other *	9%	12%
More Than One Reason	8%	7%
Outdoor Experience	3%	5%
Total	100%	100%
Sample Size (n=)	148	236

* Other:

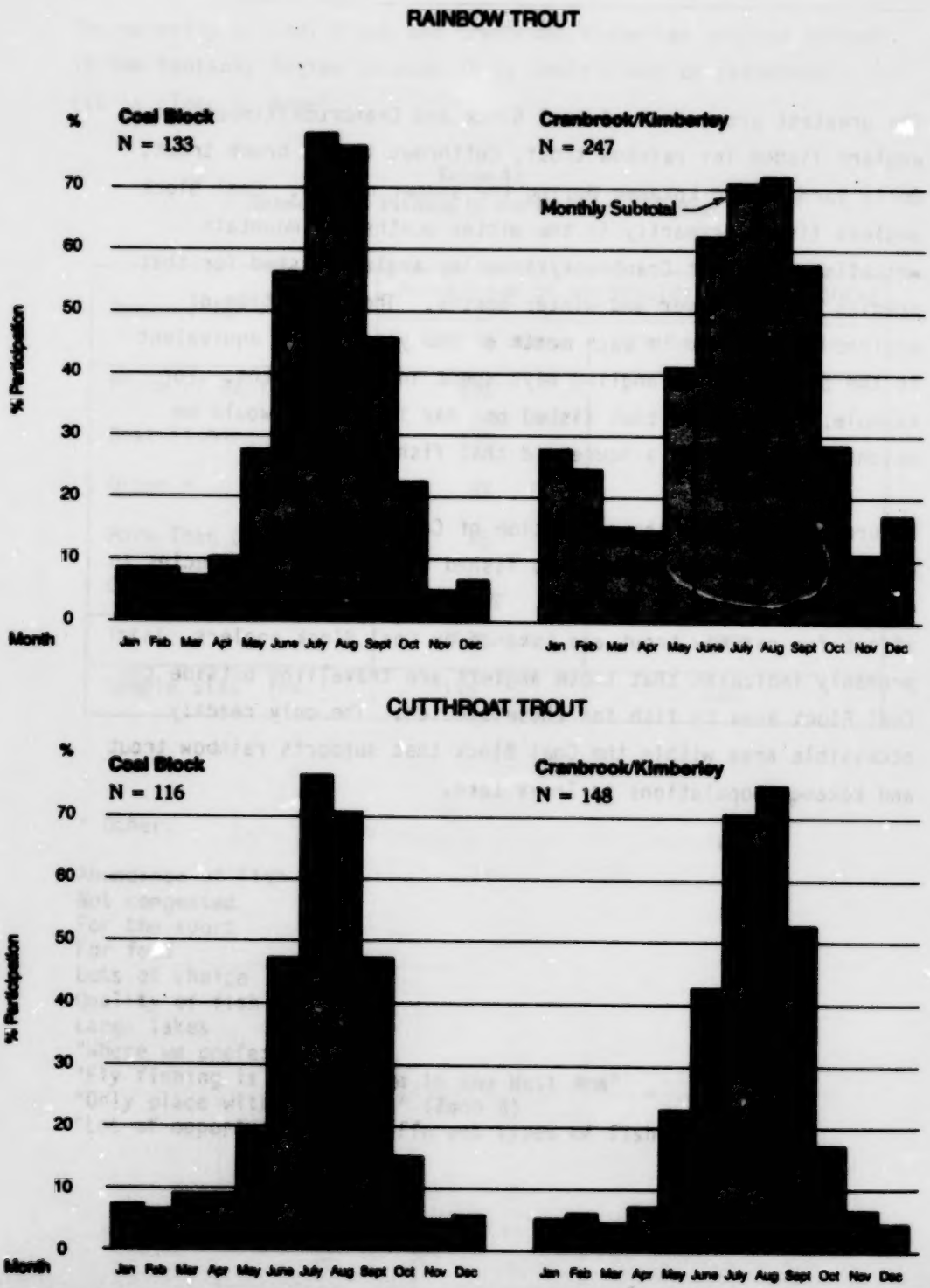
Abundance of Fish
Not congested
For the sport
For food
Lots of choice
Quality of fish
Large lakes
"Where we prefer to camp"
"Fly fishing is a challenge in the West Arm"
"Only place with fish left" (Zone 8)
"Lot of opportunity for different types of fishing"

8. (a) Please indicate in which month(s) the anglers of your household fish in the Kootenay Region for each of the following species.

The greatest proportion of Coal Block and Cranbrook/Kimberley anglers fished for rainbow trout, cutthroat trout, brook trout, Dolly Varden, and kokanee during the summer months. Coal Block anglers fished primarily in the winter months for mountain whitefish, and most Cranbrook/Kimberley anglers fished for that species in the summer and winter months. The proportion of anglers that fished in each month of the year is not equivalent to the proportion of angling days spent in those months. For example, a household that fished one day in a month would be weighted the same as a household that fished 31 days.

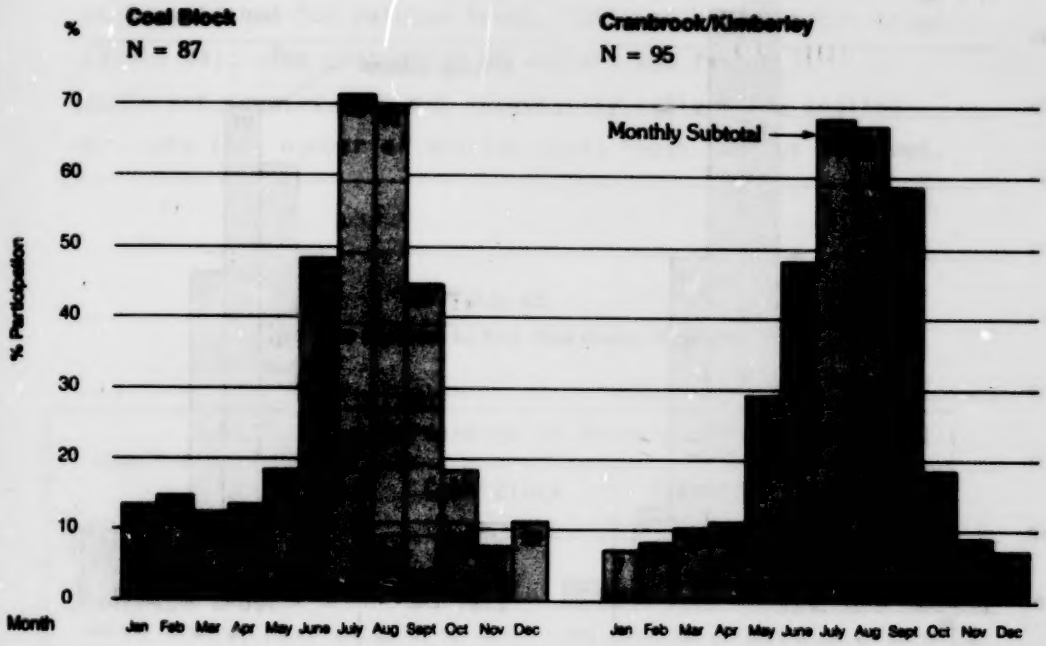
Figures 4 to 9 show the proportion of Coal Block and Cranbrook/Kimberley anglers who fished for each of six species in one or more months of the year. The distribution of fishing effort for rainbow trout and kokanee by Coal Block anglers probably indicates that those anglers are travelling outside the Coal Block area to fish for those species. The only readily accessible area within the Coal Block that supports rainbow trout and kokanee populations is Grave Lake.

Figures 4 and 5
Household Participation in Fishing in the Kootenay Region, by Month

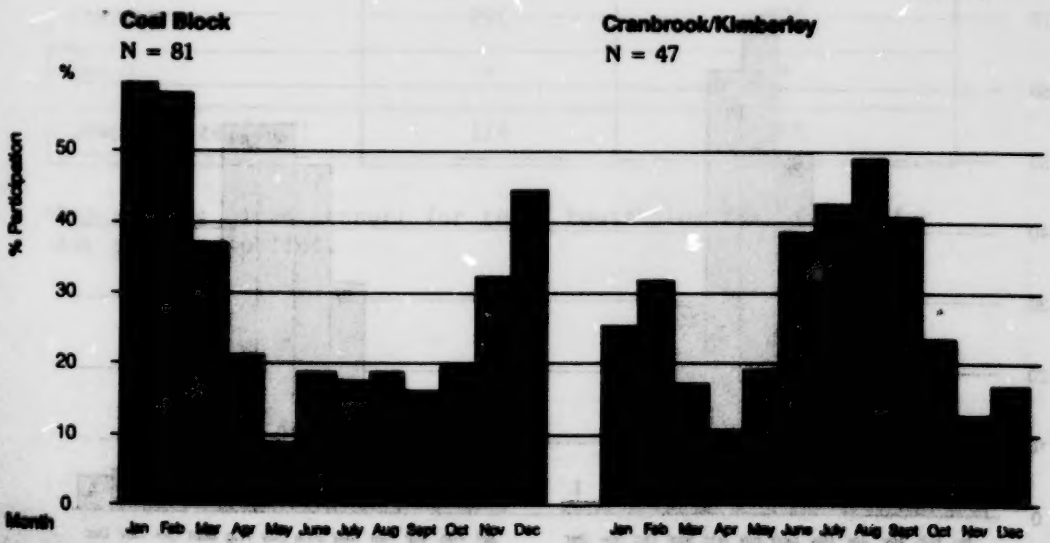


Figures 6 and 7
Household Participation in Fishing in the Kootenay Region, by Month

DOLLY VARDEN

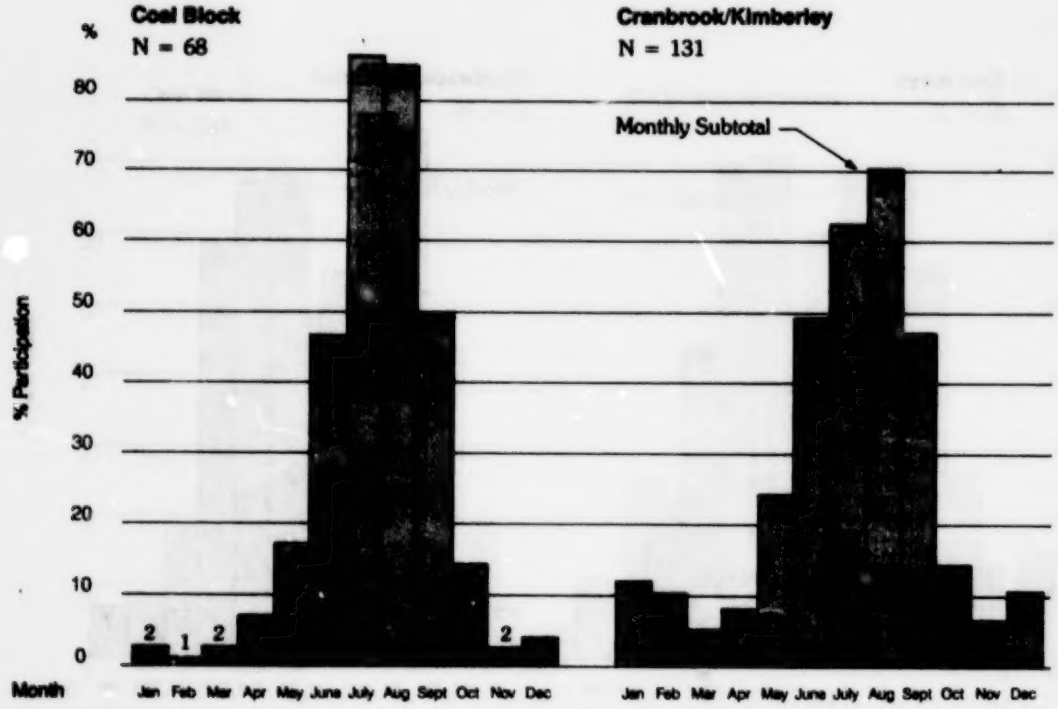


MOUNTAIN WHITEFISH

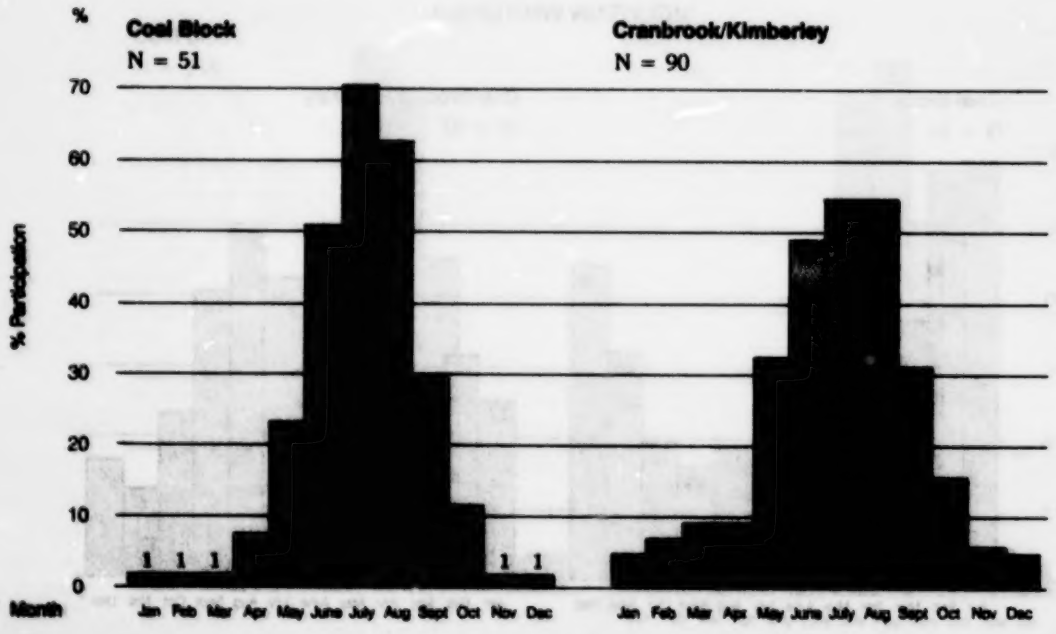


Figures 8 and 9
Household Participation in Fishing in the Kootenay Region, by Month

BROOK TROUT



KOKANEE



8. (b) For which of the following species do the anglers of your household fish in the Kootenay Region?

The highest proportion of Coal Block and Cranbrook/Kimberley anglers fished for rainbow trout, followed by cutthroat trout (Table 44). The proportion of anglers who fished for different species does not necessarily reflect the angling pressure (ie. number of angling days) those species received.

Table 44
Species Fished in the Kootenay Region

Species Fished	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Rainbow trout	76%	88%
Cutthroat trout	67%	53%
Dolly Varden	50%	34%
Mountain whitefish	47%	17%
Brook trout	39%	47%
Kokanee	29%	32%
Total	*	*
Sample Size (n=)	174	282

*Percentages given account for those households that fished for one or more species.

9. When does your household do most of its fishing in the Kootenay Region? Please rank your answers 1 (most common) to 3 (least common).

The most popular time for Coal Block and Cranbrook/Kimberley residents to fish in the Kootenay Region was on day trips.

Table 45
Most Common Type of Fishing Trip in the Kootenay Region

I Coal Block

Type of Trip	Percentage of Households that Responded			
	Most Common	2nd Most Common	3rd Most Common	Did Not Rank
On Day Trips	59%	21%	10%	10%
On Holidays	22%	30%	28%	20%
On Overnight Trips	13%	25%	40%	22%
Sample Size (n=)	210			

II Cranbrook/Kimberley

Type of Trip	Percentage of Households that Responded			
	Most Common	2nd Most Common	3rd Most Common	Did Not Rank
On Day Trips	49%	23%	16%	12%
On Holidays	24%	28%	28%	20%
On Overnight Trips	21%	26%	32%	21%
Sample Size (n=)	318			

10. (a) Are the anglers of your household satisfied with the catch and possession limits set out in the present fishing regulations?

In both the Coal Block and in Cranbrook/Kimberley, 77% of the anglers were satisfied with the 1980 catch and possession limits.

Table 46
Satisfaction with the 1980 Fishing Regulations

Level of Satisfaction	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Satisfied	77%	77%
Dissatisfied	23%	23%
Total	100%	100%
Sample Size	209	314

10. (b) If you answered "No", please tell us why you are not satisfied.

Approximately 40% of the Coal Block anglers who were dissatisfied with the 1980 catch and possession limits thought those limits were not restrictive enough, and about 40% thought they were too restrictive. In Cranbrook/Kimberley, almost 60% of the anglers who were dissatisfied with the limits thought they were not restrictive enough, and about 20% thought the limits were too restrictive (Table 47).

Table 47
Reasons for Dissatisfaction with the 1980 Fishing Regulations

Reasons for Dissatisfaction	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Limits too restrictive	41%	22%
Limits not restrictive enough	39%	57%
Other*	14%	13%
Winter limits not restrictive enough	5%	2%
Non-B.C. resident limits not restrictive enough	2%	6%
Total	100%	100%
Sample Size (n=)	44	68

Other*

Regulations should be based on research
Need a family limit
Stream fishing deteriorating
Zone 8 too heavily fished
Dissatisfied with the regulations at Whiteswan Lake
Lakes/streams not stocked enough
"Not very good fishermen"

11. *How often do you, yourself (not the anglers of your household), catch your daily limit?*

The majority of anglers in the Coal Block and in Cranbrook/Kimberley seldom or never catch their daily limit (70% and 75%, respectively).

Table 48
Frequency with Which Anglers Catch Their Daily Limit

Frequency	Coal Block	Cranbrook/Kimberley
Always	2%	1%
Usually	28%	24%
Seldom	45%	53%
Never	25%	22%
Total	100%	100%
Sample Size (n=)	205	315

What is the relationship between the reasons for dissatisfaction with the 1980 fishing regulations and how often anglers catch their daily limit?

10. (b) Reasons for dissatisfaction with the 1980 catch and possession limits.

versus

11. How often anglers catch their daily limit.

Those Coal Block and Cranbrook/Kimberley anglers who thought the 1980 catch and possession limits were too restrictive did so regardless of how often they catch their daily limit. However, most of the anglers who thought the 1980 limits were not restrictive enough seldom or never catch their daily limit (Table 49).

Table 49
Reasons for Dissatisfaction with the 1980 Catch and Possession Limits by Frequency with Which Anglers Catch Their Limit

I Coal Block

Reasons for Dissatisfaction With 1980 Fishing Regulations	Percentage of Anglers who Responded			
	Always	Usually	Seldom	Never
Limits too restrictive (Sample Size = 18)	11%	50%	33%	6%
Limits not restrictive enough enough (Sample Size = 16)	6%	19%	44%	31%

II Cranbrook/Kimberley

Reasons for Dissatisfaction With 1980 Regulations	Percentage of Anglers who Responded			
	Always	Usually	Seldom	Never
Limits too restrictive (Sample Size = 15)	7%	40%	53%	0%
Limits not restrictive enough (Sample Size = 39)	0%	23%	44%	33%

12. ***If the chance of catching fish in the Kootenay Region decreased, what would the anglers of your household do? Please check only one response.***

In response to a decline in fishing success, the majority of anglers in both samples would either fish in other parts of the region, continue to fish in the same spots, or stop fishing (Table 50). Other responses included fishing in another part of the Province, in Alberta, or in the United States.

Table 50
Response to a Decline in Fishing Success

Response to Decline in Success	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Fish in other parts of the region	33%	39%
Continue to fish in the same spots	29%	21%
Stop fishing	20%	21%
Fish in another part of the province	7%	9%
Fish in Alberta or the U.S.	6%	4%
Other *	6%	6%
Total	100%	100%
Sample Size (n=)	200	301

*Other:
Complain to government about present management of fishing resource
Request government to reduce catch and possession limits
Request government to reduce out-of-province users' limits
Request government to impose catch and release regulations
Request government to increase out-of-province users' fees
Request government to restrict some lakes to residents only
Fish less frequently
Investigate possible reasons for the decrease

How does the mean number of days fished by all households in Zones 1 to 5 and 6 to 8 compare with the mean number of days fished in those zones by the households that would stop fishing in response to a decline in success?

5. Mean days fished in Zones 1–5 and Zones 6–8 by all households.

versus

12. Mean days fished in Zones 1–5 and Zones 6–8 by those households that would stop fishing in response to a decline in success.

The Coal Block and Cranbrook/Kimberley households that indicated they would stop fishing in response to a decline in success fished fewer days in 1980, on the average, than the other households surveyed.

Table 51

Mean Days Fished by All Angling Households in Zones 1 to 5 and Zones 6 to 8, compared to Mean Days Fished by Those Households that Would Stop Fishing in Response to a Decline in Success

	Mean Household Days			
	Coal Block		Cranbrook/Kimberley	
Zones Fished In	all angling households	households that would stop fishing	all angling households	households that would stop fishing
1 - 5	19.1	12.7	12.3	10.5
Sample Size (n=)	174	35	82	13
6 - 8	12.0	5.8	18.2	15.7
Sample Size (n=)	107	17	265	52

How often do the anglers who would stop fishing in response to a decline in success catch their daily limit?

12. Stop fishing in response to a decline in success.

versus

11. How often anglers catch their daily limit.

In the Coal Block, 75% of the anglers who would stop fishing in response to a decline in success seldom or never catch their daily limit. Similarly, 81% of the Cranbrook/Kimberley anglers who would stop fishing seldom or never catch their limit (Table 52).

Table 52
Stop Fishing in Response to a Decline in Success by How Often Anglers Catch Their Daily Limit

How Often Anglers Catch Limit	Stop Fishing in Response to a Decline in Success	
	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Always	3%	2%
Usually	23%	17%
Seldom	45%	48%
Never	30%	33%
Total	100%	100%
Sample Size (n=)	40	64

13. In the opinion of the anglers of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important) and 3 (third most important).

Table 53 shows the percentage of anglers who thought a particular species was first, second, or third most important for receiving attention for habitat restoration and enhancement. Most of the Coal Block and Cranbrook/Kimberley anglers who ranked a species as most important chose rainbow trout (51% and 65%, respectively).

Table 53
Species Chosen to Receive Attention for Habitat Restoration and Enhancement

I Coal Block

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Rainbow Trout	50.5%	21.4%	15.1%
Cutthroat Trout	25.5%	21.4%	14.0%
Brook Trout	6.6%	20.3%	26.3%
Dolly Varden	7.1%	22.5%	16.8%
Kokanee	7.1%	10.7%	20.1%
Mountain Whitefish	3.1%	3.7%	7.8%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	196	187	179

II Cranbrook/Kimberley

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Rainbow Trout	64.9%	22.8%	7.4%
Cutthroat Trout	17.6%	22.5%	17.4%
Brook Trout	8.1%	29.8%	30.1%
Dolly Varden	4.4%	9.7%	22.0%
Kokanee	4.7%	14.5%	18.8%
Mountain Whitefish	0.3%	0.7%	4.3%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	296	289	282

14 (a) Who do the anglers of your household think should fund habitat restoration and enhancement projects?

Most of the anglers in the Coal Block and Cranbrook/Kimberley thought government should fund fisheries habitat restoration and enhancement projects (64% and 56%, respectively).

14 (b) How do the anglers of your household think those funds should be raised?

Coal Block and Cranbrook/Kimberley anglers thought funds for habitat restoration and enhancement projects should be raised either through the sale of fishing licences, or through regular government programmes. It appears that the anglers who chose the former option thought funds from the sale of fishing licences should be put directly into fisheries management, rather than into general revenue.

Table 54
Sources of Funding for Habitat Restoration and Enhancement Projects

Source of Funding	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	78%	69%
(a) government, general	(64%)	(56%)
(b) government and users	(7%)	(9%)
(c) government and industry	(5%)	(2%)
(d) government and other	(2%)	(3%)
B. Users	7%	20%
C. Industry	9%	4%
(a) industry, general	(4%)	(2%)
(b) industry and users	(5%)	(2%)
D. Habitat Destroyers	3%	2%
E. More than one of the above	2%	2%
F. Other*	2%	3%
Total	100%	100%
Sample Size (n=)	176	280

*Other:
general public
conservation fund
outdoor clubs

Table 55
Methods for Raising Funds for Habitat Restoration and Enhancement Projects

Method for Raising Funds	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	29%	32%
(a) government, general	(19%)	(16%)
(b) government and users	(9%)	(14%)
(c) government and industry	(0%)	(1%)
(d) government and other	(1%)	(1%)
B. Users	39%	55%
(a) users, general	(1%)	(2%)
(b) licence fees, general	(21%)	(22%)
(c) licence fees, non-residents only		
(d) licence fees all users, non-residents pay more	(5%)	(7%)
C. Industry	14%	4%
(a) industry, general	(7%)	(1%)
(b) industry and users	(8%)	(3%)
D. Habitat Destroyers	2%	1%
E. More than one of the above	7%	4%
F. Other*	8%	4%
Total	100%	100%
Sample Size (n=)	160	268

* Other:
lotteries
public donations
recreation grants

15. If it is determined that harvest must be controlled to maintain fish populations, even after habitat restoration and enhancement activities have been carried out, which three options would the anglers of your household prefer? Please rank your answers 1 (most preferred) to 3 (least preferred).

Table 56 shows the percentage of anglers who ranked a particular management option as their first, second, or third preference for harvest control. The fisheries management option most preferred for harvest control by both Coal Block and Cranbrook/Kimberley anglers was to close areas on alternate years to allow natural stocks to rebuild.

Table 56
Fisheries Management Options Preferred for Harvest Control

I Coal Block

Option	Percentage of Households that Responded		
	First Preference	Second Preference	Third Preference
Close areas on alternate years to allow natural stocks to rebuild	30.3%	25.5%	17.4%
Restrict fishing seasons	18.4%	19.8%	15.2%
Establish size limits	17.9%	12.0%	14.1%
Reduce catch and possession limits	13.4%	17.7%	14.7%
Other*	8.0%	4.2%	14.7%
Limit road access	8.0%	10.9%	10.9%
Restrict gear types	4.0%	9.9%	13.0%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	201	192	184

II Cranbrook/Kimberley

Option	Percentage of Households that Responded		
	First Preference	Second Preference	Third Preference
Close areas on alternate years to allow natural stocks to rebuild	26.4%	26.8%	17.5%
Restrict fishing seasons	17.0%	16.7%	19.3%
Establish size limits	11.3%	14.6%	13.8%
Reduce catch and possession limits	13.5%	16.4%	18.5%
Other*	15.8%	4.2%	8.4%
Limit Road Access	7.4%	9.1%	8.7%
Restrict gear types	8.7%	12.2%	13.8%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	311	287	275

*Other: see following page

Of the Coal Block anglers who chose "other" as one of the three management options they most preferred, 57% mentioned restricting non-resident anglers or increasing non-resident licence fees (Table 57). Similarly, 48% of the Cranbrook/Kimberley anglers who chose "other" mentioned one of those two options.

Table 57
Other Options for Harvest Control

Options	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Restrict non-resident anglers	47%	38%
Enforce existing regulations	16%	21%
Restrict winter fishing	12%	19%
Other**	16%	12%
Increase fees for non-resident anglers	10%	10%
Total	100%	100%
Sample Size (n=)	51	84

**Other:

institute catch and release regulations
"promote lake derbies to take pressure off streams"
stock lakes more often
stock Moyie Lake
restrict fishing during whitefish spawning
pollution control and prevention of habitat destruction

How does the fish species anglers thought should receive the most attention for habitat restoration and enhancement compare with the fisheries management option that was most preferred for harvest control?

13. Fish species chosen to receive the most attention for habitat restoration and enhancement (rainbow trout and cutthroat trout only).

versus

15. Fisheries management option most preferred for harvest control.

Tables 58 and 59 show which fisheries management options were ranked most important by the anglers who thought rainbow trout and cutthroat trout, respectively, should receive the most attention for habitat restoration and enhancement.

Table 58
Fisheries Management Options Most Preferred for Harvest Control by Anglers Who Thought Rainbow Trout Should Receive the Most Attention for Habitat Restoration and Enhancement

Option Most Preferred	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Temporary angling closures*	27%	22%
Restrict fishing seasons	19%	21%
Reduce catch and possession limits	18%	17%
Establish size limits	21%	13%
Limit road access	2%	5%
Restrict gear types	6%	9%
Other	6%	15%
Total	100%	100%
Sample Size (n=)	94	185

Table 59
Fisheries Management Options Most Preferred for Harvest Control by Anglers Who Thought Cutthroat Trout Should Receive the Most Attention for Habitat Restoration and Enhancement

Option Most Preferred	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Temporary angling closures*	27%	33%
Restrict fishing seasons	27%	8%
Reduce catch and possession limits	10%	2%
Establish size limits	4%	8%
Limit road access	23%	15%
Restrict gear types	2%	13%
Other	6%	21%
Total	100%	100%
Sample Size (n=)	48	48

*Temporary angling closures is another term for closing areas on alternate years to allow natural stocks to rebuild.

3.2.3 Summary of Findings

Of the 669 Coal Block households that were surveyed by telephone, 62% participated in fishing in 1980. It is assumed that the same proportion of Cranbrook and Kimberley households fished as did in the Coal Block.

Forty-five percent of the residents of both the Coal Block communities and Cranbrook and Kimberley fished in 1980. The average number of anglers in each Coal Block and Cranbrook/Kimberley household that participated from an average household size of 3.2 and 3.1, respectively, was 2.3.

Thirty-six percent of the Coal Block anglers and thirty-one percent of the Cranbrook/Kimberley anglers were unlicensed (under 16 years of age) in 1980.

In 1980, Coal Block and Cranbrook/Kimberley anglers spent most of their time fishing inside B.C. (93% and 97% of their total angling days, respectively). Each Coal Block angler spent an average of 26 days fishing in B.C., and each Cranbrook/Kimberley angler spent an average of 23 days. Coal Block anglers spent over 175,000 days fishing inside and outside B.C. in 1980, and Cranbrook/Kimberley anglers spent over 200,000 days.

Of the total number of days Coal Block residents spent fishing inside B.C., 91% (approximately 140,000 days) were spent in the Kootenay Region. Similarly, Cranbrook/Kimberley anglers spent 90% of their 1980 B.C. angling days (approximately 200,000 days) in the region.

Coal Block and Cranbrook/Kimberley anglers generally stayed close to home to fish. Within the Kootenay Region, Coal Block

anglers spent 73% of their time fishing in the Coal Block, while Cranbrook/Kimberley anglers spent 19% of their time fishing there.

The highest proportion of Coal Block anglers fished in Zone 2 (lower Elk valley), followed by Zones 1 (upper Elk valley) and 5 (Flathead River drainage). Zones 2 and 1 were also most preferred for fishing by Coal Block anglers. Most Cranbrook/Kimberley anglers fished in Zone 8 (Kootenay Region excluding the Coal Block, lower Kootenay trench, and Bull River drainage), followed by Zones 7 (Bull River drainage) and 6 (lower Kootenay trench). These same zones were also most preferred for fishing by Cranbrook/Kimberley anglers.

In 1980, Coal Block anglers spent more time stream fishing than lake fishing in the region (68% and 32% of their regional angling days, respectively), whereas Cranbrook/Kimberley anglers spent more time lake fishing (64% of their Kootenay Region angling days). Both Coal Block and Cranbrook/Kimberley anglers stayed close to home to stream fish. Most lake fishing in the region was done outside the Coal Block area by anglers in both study populations, due to the better lake fishing opportunities in those areas.

The highest proportion of Coal Block and Cranbrook/Kimberley anglers fished for rainbow trout, followed by cutthroat trout. The greatest proportion of Coal Block and Cranbrook/Kimberley anglers fished for those two species, brook trout, Dolly Varden and kokanee during the summer months. Coal Block anglers fished primarily in the winter months for mountain whitefish, and most Cranbrook/Kimberley anglers fished for that species in the summer and winter. The proportion of anglers who fished in each month of the year is not equivalent to the

proportion of angling days spent in those months, as indicated under Question 8(a).

Coal Block and Cranbrook/Kimberley anglers most commonly fished on day trips in the Kootenay Region.

In the Coal Block and Cranbrook/Kimberley, 77% of the anglers were satisfied with the catch and possession limits set out in the 1980 fishing regulations.

Most Coal Block and Cranbrook/Kimberley anglers seldom or never catch their daily limit.

In response to a decline in fishing success in the Kootenay Region, the majority of Coal Block and Cranbrook/Kimberley anglers would either fish in other parts of the region, continue to fish in the same spots, or stop fishing.

Those Coal Block and Cranbrook/Kimberley households that indicated they would stop fishing in response to a decline in success fished fewer days in 1980, on the average, than the other households surveyed. Most of the anglers in the households that would stop fishing seldom or never catch their daily limit.

Most Coal Block and Cranbrook/Kimberley anglers thought rainbow trout should receive the most attention for habitat restoration and enhancement.

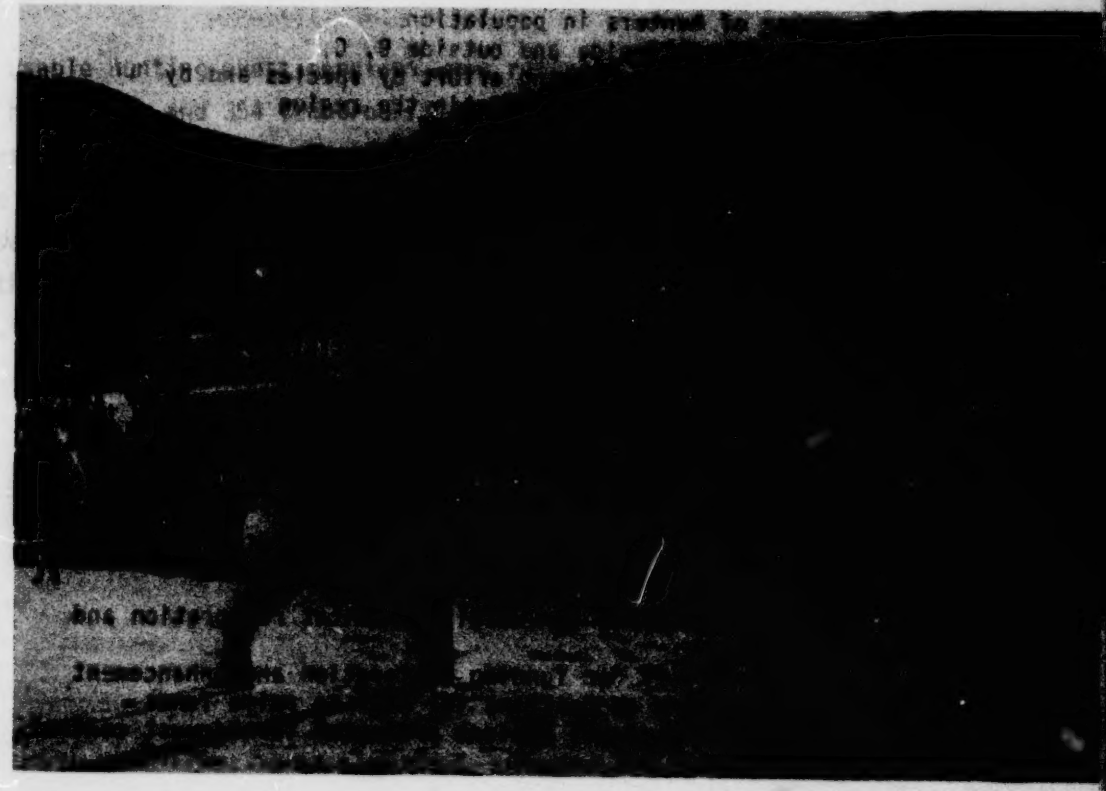
Most Coal Block and Cranbrook/Kimberley anglers thought fisheries habitat restoration and enhancement projects should be funded by government, and that these funds should be raised either through the sale of fishing licences or through regular government programmes. It appears that the anglers who chose

the former method of raising funds thought money raised through the sale of fishing licences should be put directly into fisheries management, rather than into general revenue.

The fisheries management option most preferred for harvest control by both Coal Block and Cranbrook/Kimberley anglers was to close areas on alternate years to allow natural stocks to rebuild.

3.3 Hunting

Rocky Mountain bighorn sheep *Courtesy of B.C. Ministry of Environment*



3.3.1 Introduction

The hunting questionnaire was designed to satisfy three objectives:

1. to quantify current participation in hunting within and immediately adjacent to the Southeast Coal Block by Coal Block and Cranbrook/Kimberley residents, by determining

- number of hunters in population
- hunting days inside and outside B. C.
- distribution of hunting effort by species and by geographic area (zone) within the region

2. to assess hunters' attitudes towards present wildlife management in the Kootenay Region, by determining

- reasons for hunting in the Kootenay Region
- species hunted in the region and satisfaction with success rates for those species
- reaction to a decline in hunting success

3. to assess hunters' attitudes towards future wildlife management in the Kootenay Region, by determining

- species preferred for wildlife habitat restoration and enhancement
- responsibility for funding restoration and enhancement projects, and suggestions for ways to raise funds
- wildlife management options preferred for harvest control.

The following chapter lists each question as it appeared in the hunting questionnaire, and reports the findings of each. In some cases, the responses to two questions are combined to determine whether or not there is a relationship between them. In these instances, a question is first presented which addresses the relationship to be investigated, followed by the two questions being analysed. It is important to note that the questionnaire results are based on responses from the residents in the study populations who hunted in 1980. The geographic areas referred to in this chapter are shown in Figure 2. Appendix C.8 includes tables showing the confidence limits on the data that is presented. A critique of the questionnaire is provided in Appendix E.3.2.

Usable hunting questionnaires were returned from 139 Coal Block households and 354 Cranbrook/Kimberley households. These figures represent the base sample sizes for this chapter. The sample sizes presented with each question are often less than the base sample sizes, due to non-responses and/or unusable responses. Note that the sample sizes accompanying some questions are quite small, thus caution should be used in interpreting those results.

3.3.2 Questionnaire Results

1. How many members of your household hunted in the past year?

Eighteen percent of the residents of both the Coal Block communities and of Cranbrook and Kimberley hunted in 1980. Table 60 shows the average number of hunters in each household and the estimated number of hunters in each study population.

Table 60
Estimated Number of Hunters

Coal Block	
estimated number of households that hunted	1,871*
x mean number of hunters per household	1.420
= estimated number of hunters in the population	2,657
÷ total Coal Block population	14,620
x 100	
= percentage of population that hunted	18%

Cranbrook/Kimberley	
estimated number of households that hunted	3,024*
x mean number of hunters per household	1.355
= estimated number of hunters in the population	4,098
÷ total Cranbrook/Kimberley population	22,886
x 100	
= percentage of population that hunted	18%

*See Appendix, page C 19(a) for an explanation of how the number of households that hunted was derived.

2. How many days in the past year did the members of your household hunt inside and outside British Columbia?

Coal Block and Cranbrook/Kimberley hunters spent most of their time hunting in British Columbia in 1980 (99% and 97% of their total hunting days, respectively). The number of days they hunted inside and outside British Columbia is shown in Table 61.

Table 61
Estimated Hunting Days, Inside and Outside B.C.

	Coal Block			Cranbrook/Kimberley		
	mean hunting days per household	number of hunting households*	estimated number of hunting days**	mean hunting days per household	number of hunting households*	estimated number of hunting days**
Inside B. C.	39	136 (98%)	70,682 (99%)	29	208 (96%)	83,245 (97%)
Outside B. C.	9	9 (6%)	1,062 (1%)	10	17 (8%)	2,478 (3%)
Total			71,744			85,723
Sample Size (n=)		139			216	

* as some households hunted both inside and outside B.C., the sum of the percentages given is greater than 100.

** mean number of hunting days per household x estimated number of households that hunted = estimated number of hunting days by the population.

eg. Coal Block

mean hunting days per household inside B.C. (38.603) x estimated number of households that hunted inside B.C. (1,831) = estimated number of hunting days inside B.C. by the Coal Block population (70,682 days).

For a more complete explanation of the methods by which activity days were calculated, refer to Appendix C.7.

3. Why do the members of your household hunt in the Kootenay Region?

The majority of Coal Block and Cranbrook/Kimberley residents hunted in the Kootenay Region because it is their place of residence (it is close to home).

Table 62
Reasons for Hunting in the Kootenay Region

Reasons for Hunting	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Place of residence	63%	60%
Best hunting region	13%	10%
For meat	6%	6%
Abundance of game	6%	6%
Variety of species	6%	4%
For sport or recreation	4%	8%
Outdoor experience	3%	3%
Beauty of the area	1%	3%
Total	100%	100%
Sample Size (n=)	127	187

4. (a) *Please circle all the species that members of your household hunted in the Kootenay Region (Figure 1) during the past year.*

Of those Coal Block and Cranbrook/Kimberley residents who hunted in the Kootenay Region in 1980, the highest proportion sought elk, followed by white-tailed deer, mule deer and moose (Table 63).

Table 63
Species Hunted in the Kootenay Region

Species Hunted	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Elk	93%	96%
White-tailed deer	74%	86%
Mule deer	74%	70%
Moose	71%	44%
Upland game birds	25%	35%
Mountain sheep	18%	8%
Black bear	17%	15%
Grizzly bear	12%	5%
Waterfowl	6%	13%
Mountain goat	4%	4%
Cougar	3%	4%
Total	*	*
Sample Size (n=)	129	186

* Percentages given account for those households that hunted for one or more species.

4. (b) Success rate refers to the number of days required to harvest an animal. Please indicate your household's level of satisfaction with your current success rates for each of the species you hunted. Circle whether you are satisfied, somewhat satisfied or dissatisfied with your success rates.

At least 60% of Coal Block and Cranbrook/Kimberley hunters were satisfied or somewhat satisfied with their success rates within the Kootenay Region for all species except moose (Table 64).

Table 64
Satisfaction with Hunting Success Rates for Various Species in the Kootenay Region

I Coal Block

Species	Percentage of Households that Responded			
	Sample Size (n=)	Satisfied	Somewhat Satisfied	Dissatisfied
Elk	120	37%	29%	34%
Moose	92	24%	25%	51%
White-tailed deer	96	27%	34%	39%
Mule deer	96	40%	26%	34%
Mountain sheep	23	35%	35%	30%
Mountain goat	5	40%	20%	40%
Black bear	22	55%	36%	9%
Grizzly bear	16	25%	38%	38%
Cougar	4	25%	50%	25%
Waterfowl	8	50%	13%	38%
Upland game birds	32	34%	34%	31%

II Cranbrook/Kimberley

Species	Percentage of Households that Responded			
	Sample Size (n=)	Satisfied	Somewhat Satisfied	Dissatisfied
Elk	179	48%	28%	25%
Moose	82	37%	20%	44%
White-tailed deer	159	51%	28%	21%
Mule deer	130	53%	27%	20%
Mountain sheep	14	43%	21%	36%
Mountain goat	8	13%	38%	50%
Black bear	28	57%	14%	29%
Grizzly bear	10	20%	40%	40%
Cougar	7	57%	29%	14%
Waterfowl	24	33%	29%	38%
Upland game birds	65	35%	26%	39%

5. Please indicate the number of days members of your household hunted each species in each zone.

Zone 1 received the most hunting pressure by Coal Block hunters in 1980, followed by Zones 2 and 3 (68% of their total hunting days were spent in Zones 1,2 and 3). For each species, the zones in which the greatest amount of hunting pressure by Coal Block hunters occurred were as follows: elk - Zone 1, moose - Zones 1 and 3, white-tailed deer - Zones 2 and 6, mule deer - Zones 1, 2 and 3, sheep, black bear and grizzly bear - Zone 1, waterfowl - Zone 2 and upland game birds - Zones 3, 1 and 2 (Table 65).

Table 65
Hunting Days Spent in the Kootenay Region, by Zone, for Each of Several Species

I Coal Block

Species	number of hunting households*	total hunting days by survey pop.** Zones 1-8	Percentage of Hunting Days in Each Zone							
			Zone 1 Upper Elk	Zone 2 Lower Elk	Zone 3 Michel	Zone 4 Wigwam	Zone 5 Flat-head	Zone 6 Lower Trench	Zone 7 Bull R.	Zone 8 Rest of Region
Elk	120	1,994	32%	21%	17%	5%	17%	5%	2%	1%
Moose	92	1,275	30%	15%	26%	5%	16%	4%	2%	2%
White-tailed Deer	96	1,122	19%	23%	13%	4%	12%	23%	6%	2%
Mule Deer	96	1,149	24%	23%	20%	6%	7%	14%	5%	1%
Mountain Sheep	23	442	45%	17%	21%	12%	4%		1%	1%
Mountain Goat	5	5							100%	
Black Bear	22	241	42%	23%	19%		10%		2%	5%
Grizzly Bear	16	137	60%	18%	2%		10%		3%	9%
Cougar	4	0								
Waterfowl	8	37		67%				32%		
Upland Game Birds	32	542	24%	20%	27%	2%	14%	8%	2%	4%
% Total Days		6,944	29%	20%	19%	5%	13%	9%	3%	2%

*obtained from Question 4
**total hunting days is an underestimate, as not all households that indicated they hunted a species (Question 4) also stated the number of days they hunted

Cranbrook/Kimberley hunters spent 50% of their total hunting days in Zone 8 (Kootenay Region excluding the Coal Block, lower Kootenay trench, and Bull River drainage). Bighorn sheep was the only species Cranbrook/Kimberley hunters spent a significant portion of their time hunting in the Coal Block (over half of their hunting days for that species), primarily in Zone 1 (Table 65).

Figures 10 to 13 show the distribution of hunting days within the Kootenay Region, by zone, for elk, moose, white-tailed deer, and mule deer.

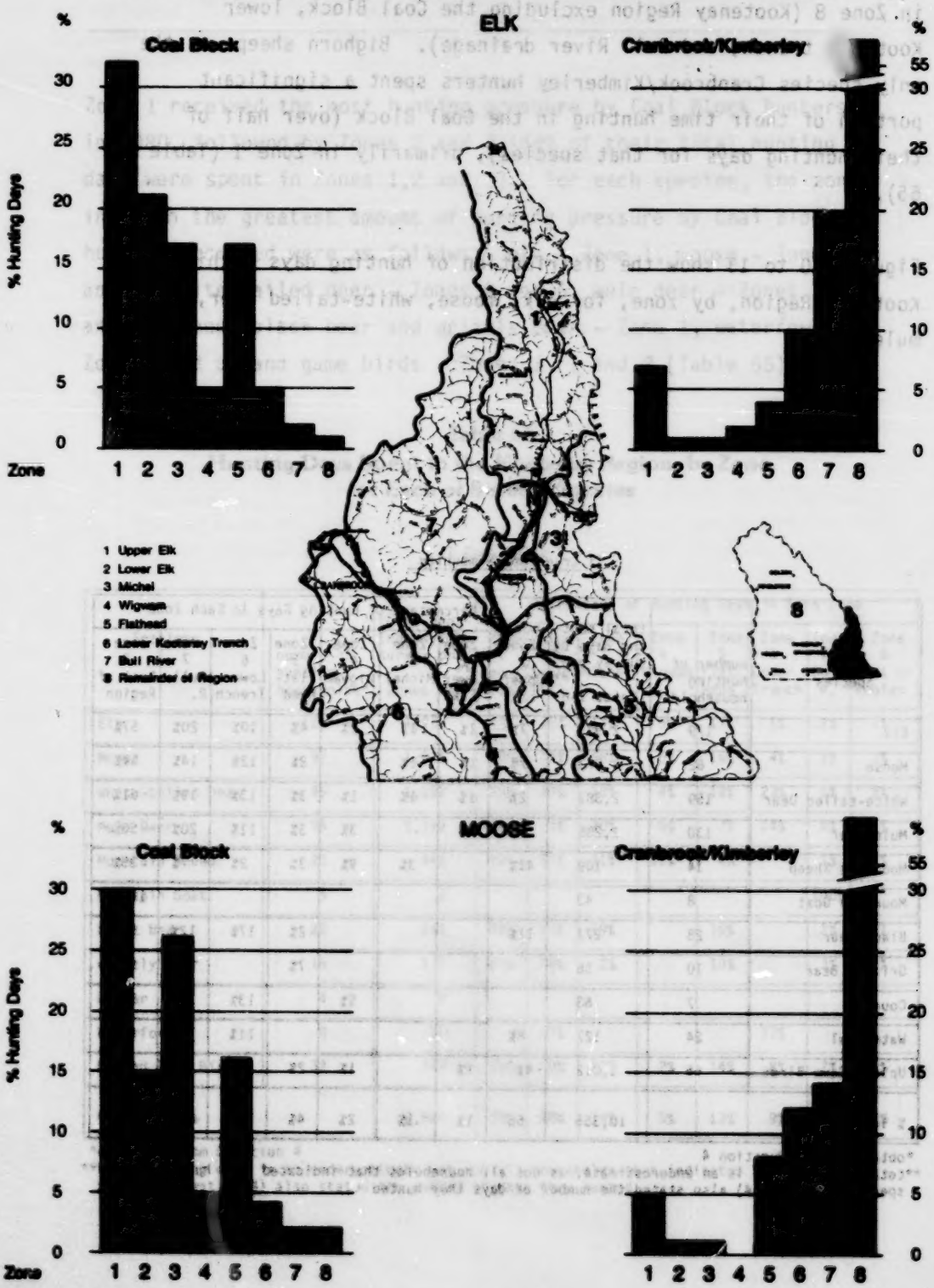
II Cranbrook/Kimberley

Species	number of hunting households*	total hunting days by survey pop. ** Zones 1-8	Percentage of Hunting Days in Each Zone							
			Zone 1 Upper Elk	Zone 2 Lower Elk	Zone 3 Michel	Zone 4 Wigwam	Zone 5 Flat-head	Zone 6 Lower Trench	Zone 7 Bull R.	Zone 8 Rest of Region
Elk	179	2,973	7%	1%	1%	2%	4%	10%	20%	57%
Moose	82	1,073	7%	1%	1%		8%	12%	14%	59%
White-tailed Deer	159	2,387	2%	1%	1%	1%	3%	13%	19%	61%
Mule Deer	130	2,235	7%	1%		3%	3%	11%	20%	56%
Mountain Sheep	14	109	41%		3%	9%	3%	2%	7%	35%
Mountain Goat	8	43								100%
Black Bear	28	277	11%				2%	17%	12%	98%
Grizzly Bear	10	56					7%			93%
Cougar	7	63				5%		13%	3%	79%
Waterfowl	24	127	8%					11%	14%	67%
Upland Game Birds	65	1,012	4%	1%		1%	2%	17%	17%	58%
% Total Days		10,355	6%	1%	1%	2%	4%	12%	18%	56%

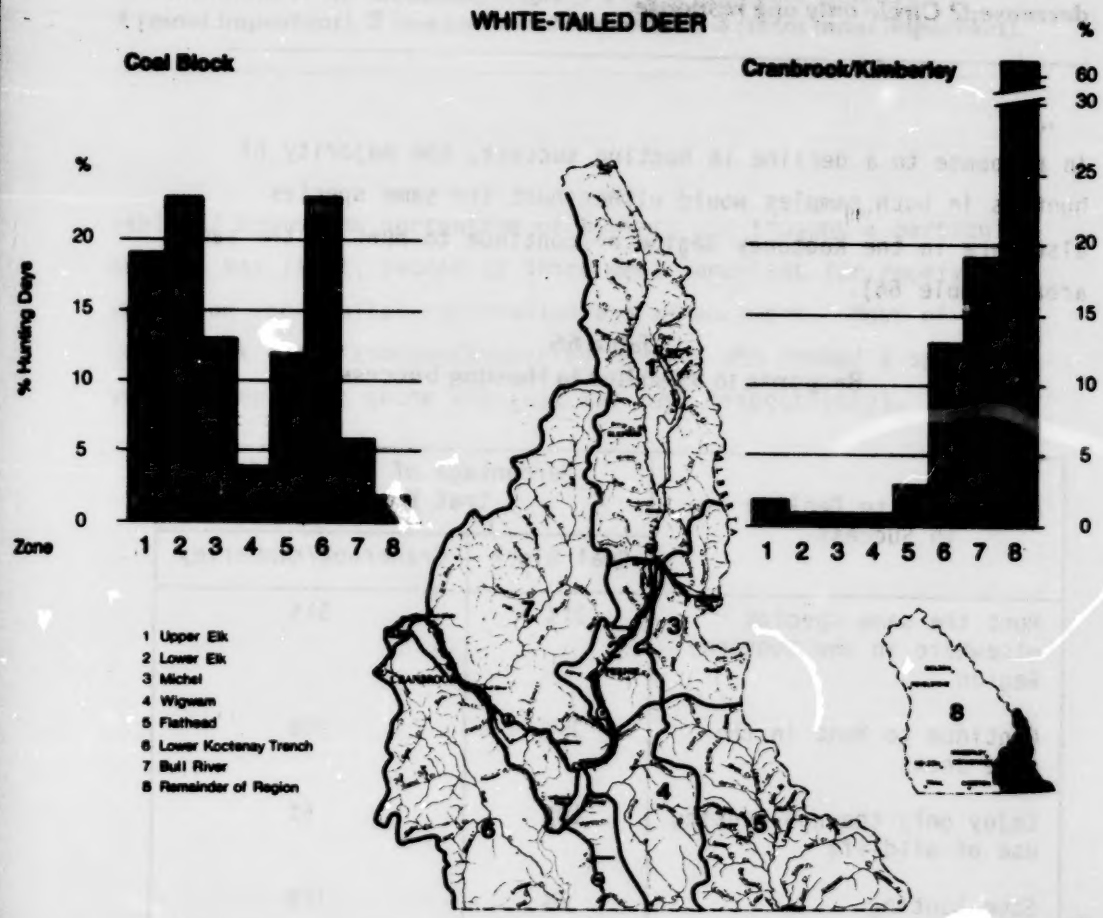
*obtained from Question 4
**total hunting days is an underestimate, as not all households that indicated they hunted a species (Question 4) also stated the number of days they hunted

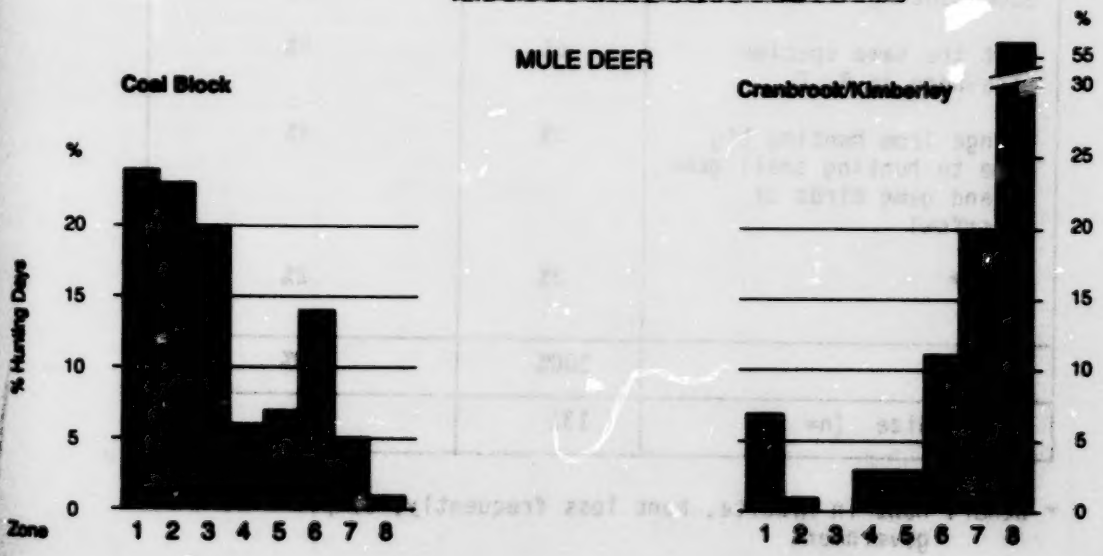
Figures 10 and 11

Distribution of Hunting Days in the Kootenay Region, by Zone



Figures 12 and 13
Distribution of Hunting Days in the Kootenay Region, by Zone





6. What would the hunters from your household do if the chance of bagging a big game animal in the zones in which you usually hunt decreased? Circle only one response.

In response to a decline in hunting success, the majority of hunters in both samples would either hunt the same species elsewhere in the Kootenay Region or continue to hunt in the same areas (Table 66).

Table 66
Response to a Decline in Hunting Success

Response to Decline in Success	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Hunt the same species elsewhere in the Kootenay Region	37%	51%
Continue to hunt in the same areas	35%	23%
Enjoy only the non-hunting use of wildlife	10%	6%
Stop hunting	6%	10%
Hunt the same species elsewhere in B. C.	6%	5%
Change from hunting big game to hunting small game, upland game birds or waterfowl	3%	4%
Other*	3%	2%
Total	100%	100%
Sample Size (n=)	131	193

* Other: hunt in Alberta, hunt less frequently, complain to government

7. In the opinion of the hunters of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important), 3 (third most important).

Table 67 shows the percentage of hunters who thought a particular species was first, second or third most important for receiving attention for habitat restoration and enhancement. Most of the Coal Block and Cranbrook/Kimberley hunters who ranked a species as most important chose elk (41% and 49%, respectively).

Table 67
Species Chosen to Receive Attention for Habitat Restoration and Enhancement

I Coal Block

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Elk	41.1%	22.3%	23.7%
Moose	21.8%	33.1%	16.1%
White-tailed deer	8.1%	9.9%	18.6%
Mule deer	4.8%	9.9%	13.6%
Mountain sheep	13.7%	10.7%	12.7%
Mountain goat	1.6%	0.8%	5.1%
Black bear	0.0%	0.8%	0.0%
Grizzly bear	8.1%	8.3%	5.1%
Cougar	0.8%	2.5%	2.5%
Waterfowl	0.0%	0.0%	0.0%
Game birds	0.0%	1.7%	2.5%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	124	121	118

II Cranbrook/Kimberley

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Elk	48.9%	18.5%	13.9%
Moose	17.9%	23.4%	13.9%
White-tailed deer	7.1%	19.6%	23.3%
Mule deer	3.3%	13.6%	15.6%
Mountain sheep	15.2%	12.5%	8.9%
Mountain goat	2.2%	4.3%	3.9%
Black bear	0.5%	0.0%	0.6%
Grizzly bear	2.2%	4.3%	5.6%
Cougar	0.0%	1.6%	1.7%
Waterfowl	0.0%	1.6%	5.0%
Game birds	2.7%	0.5%	7.8%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	184	184	180

8. (a) Who do you think should fund habitat restoration and enhancement projects?

Most of the hunters in the Coal Block and Cranbrook/Kimberley thought government should fund wildlife habitat restoration and enhancement projects.

Table 68
Sources of Funding for Habitat Restoration and Enhancement Projects

Source of Funding	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	68%	72%
(a) government, general	(48%)	(56%)
(b) government and users	(8%)	(10%)
(c) government and industry	(12%)	(3%)
(d) government and other	(0%)	(3%)
B. Users	11%	16%
C. Industry	9%	6%
(a) industry, general	(6%)	(3%)
(b) industry and users	(3%)	(4%)
D. Habitat Destroyers	4%	1%
E. More than one of the above	4%	4%
F. Other*	4%	1%
Total	100%	100%
Sample Size (n=)	125	187

* Other: outdoor clubs
lottery funds

8. (b) How do you think these funds should be raised?

Coal Block and Cranbrook/Kimberley hunters thought funds for habitat restoration and enhancement projects should be raised through the sale of hunting licences (34% and 43%, respectively). It appears that those hunters thought money raised from the sale of hunting licences should be put directly into wildlife management, rather than into general revenue.

Table 69
Methods for Raising Funds for Habitat Restoration and Enhancement Projects

Method for Raising Funds	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	32%	31%
(a) government, general	(17%)	(16%)
(b) government and users	(8%)	(15%)
(c) government and industry	(6%)	(1%)
(d) government and other	(1%)	(0%)
B. Users	34%	43%
(a) users, general	(2%)	(5%)
(b) licence fees, general	(21%)	(22%)
(c) licence fees, non-residents only	(9%)	(11%)
(d) licence fees all users, non-residents pay more	(2%)	(4%)
C. Industry	16%	7%
(a) industry, general	(10%)	(4%)
(b) industry and users	(6%)	(3%)
D. Habitat Destroyers	1%	2%
E. More than one of the above	7%	11%
F. Other*	10%	6%
Total	100%	100%
Sample Size (n=)	107	176

*Other: donations
lotteries
fines

9. If it is determined that harvest must be controlled to maintain wildlife populations, even after habitat restoration and enhancement activities have been carried out, which three options would the hunters of your household prefer? Please rank your answers 1 (most preferred) to 3 (third most preferred).

Table 70 shows the percentage of hunters who ranked a particular management option as their first, second, or third preference for harvest control. The wildlife management option most preferred for harvest control by both Coal Block and Cranbrook/Kimberley hunters was to decrease quotas for non-residents.

Table 70
Wildlife Management Options Preferred for Harvest Control

I Coal Block

Option	Percentage of Households that Responded		
	First Preference	Second Preference	Third Preference
Decrease quotas for non-residents	38.1%	16.4%	17.8%
Limit road access	16.7%	18.9%	12.7%
Reduce length of hunting season	14.3%	15.6%	16.9%
Temporary hunting closures	9.5%	17.2%	23.7%
Establish quotas for residents	7.9%	8.2%	7.6%
Other*	7.1%	4.1%	5.1%
Reduce bag limits	5.6%	18.9%	11.0%
Permanent hunting closures	0.8%	0.8%	5.1%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	126	122	118

II Cranbrook/Kimberley

Option	Percentage of Households that Responded		
	First Preference	Second Preference	Third Preference
Decrease quotas for non-residents	48.2%	15.3%	7.7%
Limit road access	9.9%	17.5%	14.2%
Reduce length of hunting season	12.0%	11.9%	17.2%
Temporary hunting closures	11.5%	21.5%	21.9%
Establish quotas for residents	3.7%	9.6%	16.0%
Other*	3.7%	6.8%	6.5%
Reduce bag limits	9.9%	16.4%	14.8%
Permanent hunting closures	1.0%	1.1%	1.8%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	191	177	169

*Other: see following page

* Other: (note: only the first four options are listed in order by the number of households that responded; the rest are responses from one household only).

Restrict non-residents

Enforce regulations

Restrict hunting to long term residents only

Increase non-resident fees

No trophy hunting

No trophy hunting, non-residents

Power line closures in some areas

Family quotas

Bow hunting

Re-establish checking stations

Specify deer tags for one white-tailed deer and one mule deer

Transplant animals

No shooting within 1/4 mile of the road

Ban guides

Quota for guides

Close bottomland hunting late in the season when elk are moving to their winter range

Limit elk and deer harvest to those with 3 or more points

Postpone hunting season for elk and moose

Limit pack animals

Establish reserves

Establish quotas by region

Allow more cow elk to be hunted

No cow season (at least every other year)

Limit vehicular access

Eliminate female seasons and cattle grazing

"More wilderness areas"

Control the length of the hunting season by the number of animals harvested in an area ie. if the kill is high in an area after one month, close the season

It is interesting that so many respondents chose quotas for non-resident hunters as their first, second, or third preference for harvest control because, as shown below, the ratio of non-resident to resident harvest in the Kootenay Region for all but animals hunted for trophy is low.

Table 71
Non-Resident versus Resident Harvest of Big Game Animals in the Kootenay Region, 1980

Species	Non-Resident Harvest, 1980	Resident Harvest, 1980	Ratio of Non-Resident to Resident Harvest
Elk	129	1,104	1:9
Moose	12	541	1:45
Deer	65	6,807	1:105
Sheep	11	24	1:2
Goat	19	68	1:4
Black Bear	105	1,016	1:10
Grizzly Bear	7	34	1:5
Cougar	11	17	1:1.5
Total	359	9,611	1:27

Source: 1980 Hunter Sample and Compulsory Reporting Data, Fish and Wildlife Branch, B.C. Ministry of Environment

3.3.3 Summary of Findings

Of the 669 Coal Block households that were surveyed by telephone, 41% participated in hunting in 1980. It is assumed that the same proportion of Cranbrook and Kimberley households hunted as did in the Coal Block.

Eighteen percent of the residents of both the Coal Block communities and Cranbrook/Kimberley hunted in 1980. The average number of hunters in each Coal Block and Cranbrook/Kimberley household that participated, from an average household size of 3.2 and 3.1, respectively, was 1.4.

In 1980, Coal Block and Cranbrook/Kimberley hunters spent most of their time hunting in B. C. (99% and 97% of their total hunting days, respectively). Each Coal Block hunter spent an average of 27 days hunting in B.C., and each Cranbrook/Kimberley hunter spent an average of 21 days. Each study population hunted over 70,000 days in total (for a total of over 140,000 days).

The majority of Coal Block and Cranbrook/Kimberley residents hunted in the Kootenay Region because it is their place of residence (it is close to home).

Coal Block hunters generally stayed within the Coal Block (Zones 1 to 5) to hunt all species, although they spent over 20% of their time hunting white-tailed deer, mule deer, and waterfowl in adjacent parts of the region. Most of their total hunting days were spent in Zone 1 (upper Elk Valley), followed by Zones 2 (lower Elk Valley) and 3 (Michel Creek drainage).

Within the Kootenay Region, most Cranbrook/Kimberley hunters went outside the Coal Block, lower Kootenay trench, and Bull River drainage to hunt in 1980. Bighorn sheep was the only species Cranbrook/Kimberley hunters spent a significant portion of their time hunting within the Coal Block (over 50% of their hunting days for that species).

Of those Coal Block and Cranbrook/Kimberley hunters who hunted in the Kootenay Region in 1980, the highest proportion sought elk, followed by white-tailed deer, mule deer, and waterfowl. At least 60% of the hunters were satisfied or somewhat satisfied with their success rates within the region for all species except moose.

In response to a decline in hunting success in the Kootenay Region, the majority of Coal Block and Cranbrook/Kimberley hunters would either hunt the same species elsewhere in the region or continue to hunt in the same areas.

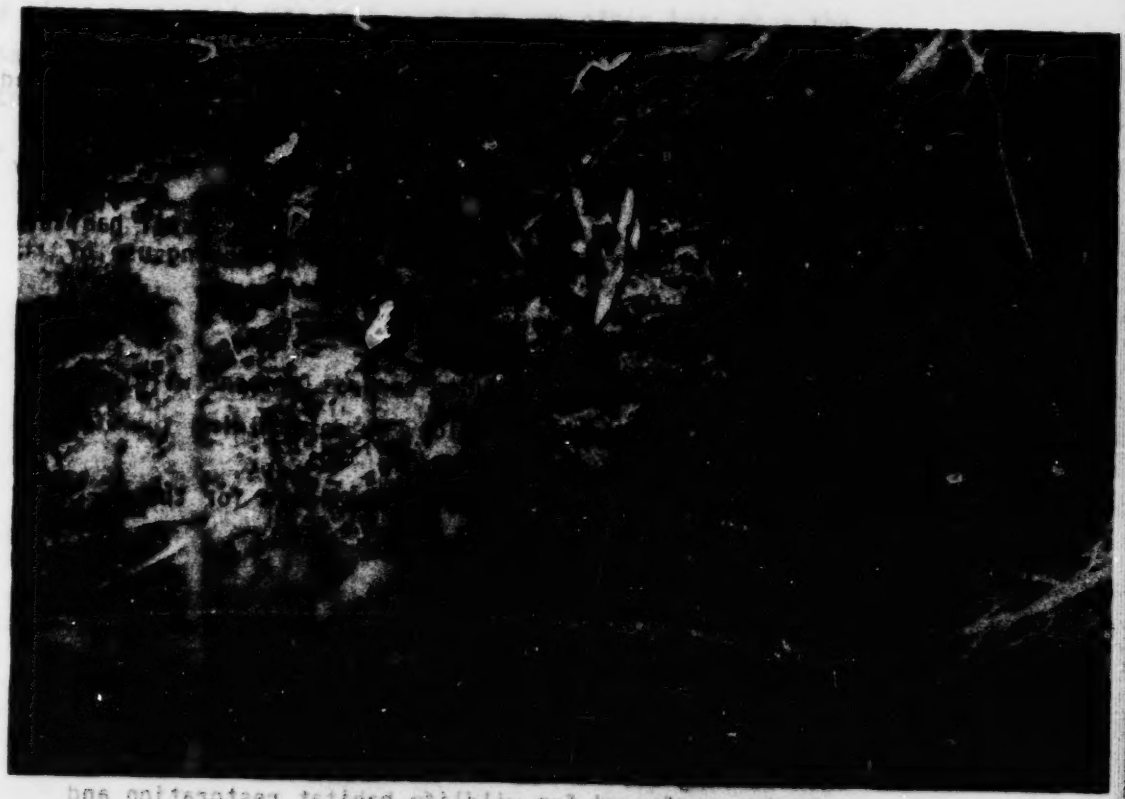
Most Coal Block and Cranbrook/Kimberley hunters thought elk should receive the most attention for habitat restoration and enhancement.

Most Coal Block and Cranbrook/Kimberley hunters thought wildlife habitat restoration and enhancement projects should be funded by government, and that those funds should be raised through the sale of hunting licences. It appears that those hunters thought money raised through the sale of hunting licences should be put directly into wildlife management, rather than into general revenue.

The wildlife managment option most preferred for harvest control by both Coal Block and Cranbrook/Kimberley hunters was to decrease quotas for non-residents.

3.4 Non-Hunting Use of Wildlife

Mule Deer *Courtesy of B.C. Ministry of Environment*



3.4.1 Introduction

The non-hunting questionnaire was designed to satisfy three objectives:

1. to quantify current participation in the non-hunting use of wildlife by Coal Block and Cranbrook/Kimberley residents, by determining

- number of viewers in population
- species most enjoyed for non-hunting use
- activity days for several non-hunting uses, by those who made a special effort to participate
- favourite seasons for the non-hunting use of wildlife
- frequency with which viewers made a special effort to enjoy the non-hunting use of wildlife
- distance travelled to view wildlife in its natural habitat
- other activities associated with the non-hunting use of wildlife

2. to assess viewers' attitudes towards present wildlife management in the Kootenay Region, by determining

- satisfaction with opportunities available for the non-hunting use of wildlife

3. to assess viewers' attitudes towards future wildlife management in the Kootenay Region, by determining

- preferred options for improving opportunities for non-hunting use
- species preferred for wildlife habitat restoration and enhancement
- responsibility for funding restoration and enhancement projects, and suggestions for ways to raise funds

The following chapter lists each question as it appeared in the non-hunting questionnaire, and reports the findings of each. It is important to note that the questionnaire results are based on responses from the residents in the study populations who enjoyed the non-hunting use of wildlife in 1980. The geographic areas referred to in this chapter are shown in Figure 2. Appendix C.8 includes tables showing the confidence limits on the data that is presented. A critique of the questionnaire is provided in Appendix E.3.2.

Usable non-hunting use of wildlife questionnaires were returned from 153 Coal Block households and 310 Cranbrook/Kimberley households. These figures represent the base sample sizes for this chapter. The sample sizes presented with each question are often less than the base sample sizes, due to non-responses and/or unusable responses. Note that the sample sizes accompanying some questions are quite small, thus caution should be used in interpreting those results.

3.4.2 Questionnaire Results

1. How many members of your household enjoyed the non-hunting use of wildlife in the past year?

Forty-two percent of the residents of the Coal Block communities and forty-five percent of the residents of Cranbrook and Kimberley enjoyed the non-hunting use of wildlife in 1980. Table 72 shows the average number of viewers in each household and the estimated number of viewers in each study population.

Table 72
Estimated Number of Viewers

Coal Block	
estimated number of households that viewed	2,035*
x mean number of viewers per household	3.0
= estimated number of viewers in the population	6,105
÷ total Coal Block population	14,620
x 100	
= percentage of population that viewed	42%
Cranbrook/Kimberley	
estimated number of households that viewed	3,289*
x mean number of viewers per household	3.159
= estimated number of viewers in the population	10,390
÷ total Cranbrook/Kimberley population	22,886
x 100	
= percentage of population that viewed	45%

*See Appendix, C 19(a) for an explanation of how the number of households that viewed was derived.

2. *Which big and small game species do the viewers of your household most enjoy? Please circle* up to three *big game animals and* up to three *small game animals.*

Elk was the big game animal most enjoyed by both Coal Block and Cranbrook/Kimberley viewers, followed by deer, moose, and mountain sheep.

Table 73
Big Game Animals Most Enjoyed for Viewing

Big Game Animals Most Enjoyed	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Elk	90%	86%
Deer	62%	74%
Moose	50%	39%
Mountain Sheep	38%	36%
Black Bear	28%	26%
Mountain Goat	6%	19%
Grizzly Bear	8%	7%
Cougar	1%	5%
Total	*	*
Sample Size (n=)	141	292

*Percentages include households that enjoyed viewing one or more big game animals.

The birds most enjoyed by Coal Block and Cranbrook/Kimberley viewers were waterfowl and raptors.

Table 74
Birds or Small Game Animals Most Enjoyed for Viewing

Birds/Small Game Most Enjoyed	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Raptors	70%	64%
Waterfowl	68%	83%
Upland Game Birds	59%	56%
Song Birds	44%	59%
Other**	15%	8%
Total	*	*
Sample Size (n=)	123	277

* Percentages include households that enjoyed viewing one or more birds or small game animals

** Other:

rabbits	herons	beavers	wolves
squirrels	woodpeckers	snakes	foxes
chipmunks	blue jays	small mammals	amphibians
humming birds	cranes	raccoons	

3. *Approximately how many days did the members of your household enjoy each of the following non-hunting uses of wildlife in the past year?*

The Coal Block and Cranbrook/Kimberley residents who made a special effort to enjoy the non-hunting use of wildlife in 1980 spent the majority of their activity days viewing or watching wildlife. The number of days those residents spent enjoying several non-hunting uses of wildlife is shown in Table 75.

Table 75
Estimated Activity Days, Non-Hunting Uses of Wildlife, by Those Who Made a Special Effort to Participate

Activity	Coal Block			Cranbrook/Kimberley		
	mean activity days per household	number of non-hunting households*	estimated number of non-hunting days**	mean activity days per household	number of non-hunting households*	estimated number of non-hunting days**
Photographing	47	86 (56%)	54,167 (20%)	42	139 (45%)	62,067 (24%)
Drawing/ Painting	134	5 (3%)	8,965 (3%)	20	8 (3%)	1,711 (1%)
Viewing/ Watching	120	112 (73%)	178,481 (67%)	84	190 (61%)	170,173 (66%)
Nature Study	89	22 (14%)	26,130 (10%)	55	40 (13%)	23,341 (9%)
Total***			267,743			257,292
Sample Size (n=)		153			310	

* of those households that enjoyed the non-hunting use of wildlife in 1980, number that made a special effort to participate in each non-hunting activity. Percentages given account for those households that participated in one or more activities.

** mean number of non-hunting days per household x estimated number of households that participated = estimated number of non-hunting days by the population.

eg. Coal Block

of the 153 households sampled that made a special effort to enjoy the non-hunting use of wildlife, 86 or 53% photographed animals. It was estimated from Question 1 that the total number of households in the Coal Block that participated in the non-hunting use of wildlife in 1980 was 2,035. Therefore, 1,144 households (56% of 2,035) made a special effort to photograph animals.

mean photographing days per household (47.349) x estimated number of households that made a special effort to photograph (1,144) = estimated number of photographing days by the Coal Block population (54,167 days)

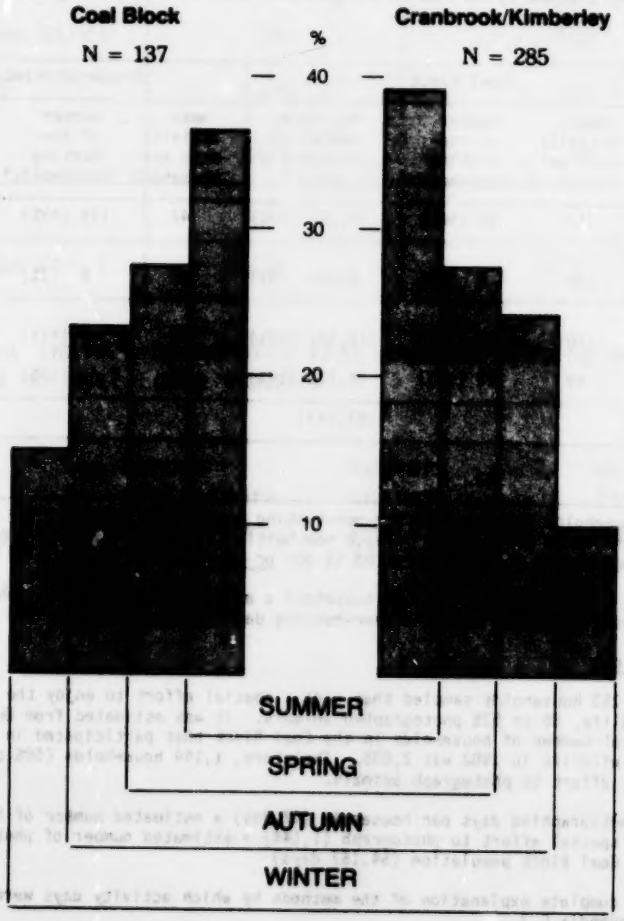
For a more complete explanation of the methods by which activity days were calculated, refer to Appendix C.7.

*** The total number of days for all non-hunting uses may be an overestimate, as the households may have participated in more than one activity on the same day.

4. What is your favourite season for enjoying the non-hunting use of wildlife? Please circle only one response.

Viewers in both the Coal Block communities and Cranbrook/ Kimberley indicated summer was their favourite season for enjoying the non-hunting use of wildlife.

Figure 14
Favourite Season for Enjoying the Non-Hunting Use of Wildlife



5. How often did the members of your household make a special effort to view, draw or photograph wildlife in the past year?

In the Coal Block communities, 94% of the viewers made a special effort to view, draw or photograph wildlife in 1980, and the greatest proportion of those viewers made the effort once a week or more. In Cranbrook/Kimberley, 87% of the viewers made a special effort, and the greatest proportion of those viewers usually made the effort once a month (Tables 76 and 77).

Table 76
Whether or Not a Special Effort was Made to View, Draw or Photograph Wildlife in 1980

Special Effort	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Sometimes	94%	87%
Never	6%	13%
Total	100%	100%
Sample Size (n=)	146	292

Table 77
Frequency with Which a Special Effort was Made to View, Draw, or Photograph Wildlife in 1980

Frequency	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Once per week or more	45%	38%
Once per month	38%	44%
Once per season	18%	18%
Total	100%	100%
Sample Size (n=)	137	254

6. When you make a special effort to view wildlife in its natural habitat, how far, one-way, do the members of your household usually travel?

The one-way distance travelled by Coal Block and Cranbrook/ Kimberley residents to view wildlife is shown in Table 78. The majority of Coal Block viewers (66%) travelled less than 50 kilometers, one-way, while 48% of the Cranbrook/Kimberley viewers travelled less than 50 kilometers.

Table 78
One-way Distance Usually Travelled to View Wildlife in its Natural Habitat

One-Way Distance Travelled	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
up to 25 km (16 mi)	31%	18%
26-50 km (17-31 mi)	35%	30%
51-75 km (32-47 mi)	19%	26%
75 km or more ($\geq$ 48 mi)	15%	27%
Total	100%	100%
Sample Size (n=)	136	190

7. What other activities do members of your household associate with the non-hunting use of wildlife? You may circle up to three responses.

Most Coal Block and Cranbrook/Kimberley viewers associated travelling by car and day hikes or walks with the non-hunting use of wildlife.

Table 79
Activities Associated with the Non-Hunting Use of Wildlife

Activity	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Travelling by car	78%	79%
Day hikes or walks	75%	75%
Overnight hikes or camping	37%	54%
Snowshoeing	17%	8%
Snowmobiling	16%	5%
Skiing	13%	24%
Other**	11%	10%
Total	*	*
Sample Size (n=)	151	295

* Percentages given account for those households that associated one or more other activities with the non-hunting use of wildlife

** Other:

boating	fishing	horseback riding
picnicking	hiking	nature study
dirt biking	working	four-wheel driving
backpacking	climbing	photographing

8. Do members of your household feel opportunities for the non-hunting use of wildlife need to be improved?

The majority of Coal Block and Cranbrook/Kimberley viewers thought opportunities for the non-hunting use of wildlife need to be improved.

Table 80
Opinions on the Need for Improving Non-Hunting Use Opportunities

Opinion	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Yes	70%	69%
No	30%	31%
Total	100%	100%
Sample Size (n=)	152	297

9. *How do you think opportunities for non-hunting use of wildlife should be improved? Please circle the options you would most like to see implemented.*

Most Coal Block and Cranbrook/Kimberley viewers thought opportunities for the non-hunting use of wildlife would be improved by the strict control of dogs and snowmobiles during winter months or by the creation of small no hunting areas.

Table 81
Options for Improving Non-Hunting Use Opportunities

Option	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
Strictly control dogs and snowmobiles during winter months to reduce harassment	62%	77%
Creation of small no hunting areas	56%	56%
Construction of road pull-offs and viewing stands	35%	32%
Other**	22%	20%
Total	*	*
Sample Size (n=)	104	202

* Percentages given account for those households that chose one or more options for improving non-hunting opportunities

** Other:

reduce hunting pressure
enforce regulations
educate the public
limit fencing of wildlife
control industry in the area
ban hunting
improve management
restrict helicopters
buy winter range
keep Albertans out
create reserves
buy farms
restrict access
keep access open
more access
road improvement
maintain abandoned roads
improve winter habitat
protect habitat
create more recreation facilities

10. Which 3 species should receive the most attention for habitat restoration and enhancement in the Kootenay Region (Figure 1)? Please rank your answers 1 (most important), 2 (second most important), and 3 (third most important).

Table 82 shows the percentage of viewers who thought a particular species was first, second, or third most important for receiving attention for habitat restoration and enhancement. Most of the Coal Block and Cranbrook/Kimberley viewers who ranked a species as most important chose elk (32% and 35%, respectively).

Rocky Mountain elk *Courtesy of B.C. Ministry of Environment*

Table 82
Species Chosen to Receive Attention for Habitat Restoration and Enhancement

I Coal Block

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Elk	31.7%	18.9%	13.2%
Moose	18.7%	24.6%	16.5%
Deer	9.8%	9.8%	24.0%
Mountain sheep	10.6%	18.9%	13.2%
Mountain goat	3.3%	9.0%	9.9%
Black bear	1.6%	3.3%	2.5%
Grizzly bear	13.0%	5.7%	9.1%
Cougar	4.1%	3.3%	3.3%
Waterfowl	4.1%	2.5%	1.7%
Game birds	3.3%	4.1%	6.6%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	123	122	121

II Cranbrook/Kimberley

Importance of Species

Species	Percentage of Households that Responded		
	First	Second	Third
Elk	34.9%	16.1%	9.3%
Moose	8.5%	17.3%	20.6%
Deer	10.9%	21.2%	17.4%
Mountain sheep	16.7%	15.3%	11.3%
Mountain goat	4.7%	6.7%	10.5%
Black bear	1.9%	2.4%	4.9%
Grizzly bear	8.5%	7.8%	7.3%
Cougar	4.3%	7.5%	3.2%
Waterfowl	4.3%	3.5%	7.3%
Game birds	5.4%	2.4%	8.1%
Total	100.0%	100.0%	100.0%
Sample Size (n=)	258	255	247

11. (a) Who do you think should fund habitat restoration and enhancement projects?

Most of the Coal Block and Cranbrook/Kimberley residents who enjoyed the non-hunting use of wildlife thought government should fund wildlife habitat restoration and enhancement projects (54% and 52%, respectively).

Table 83
Sources of Funding for Habitat Restoration and Enhancement Projects

Source of Funding	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	70%	68%
(a) government, general	(54%)	(52%)
(b) government and users	(5%)	(9%)
(c) government and industry	(7%)	(4%)
(d) government and other	(5%)	(2%)
B. Users	12%	15%
C. Industry	10%	6%
(a) industry, general	(6%)	(4%)
(b) industry and users	(4%)	(2%)
D. Habitat Destroyers	4%	3%
E. More than one of the above	1%	4%
F. Other*	3%	4%
Total	100%	100%
Sample Size (n=)	132	258

* Other: outdoor clubs
donations
East Kootenay Heritage Fund
Conservation Fund

11. (b) How do you think these funds should be raised?

Most Coal Block and Cranbrook/Kimberley viewers thought funds for habitat restoration and enhancement projects should be raised through regular government programmes (23% and 32%, respectively), or through the sale of hunting licences (31% and 26%, respectively). It appears that the viewers who chose the latter option thought funds from the sale of hunting licences should be put directly into wildlife management, rather than into general revenue.

Table 84
Methods for Raising Funds for Habitat Restoration and Enhancement Projects

Source of Funding	Percentage of Households that Responded	
	Coal Block	Cranbrook/Kimberley
A. Government	35%	42%
(a) government, general	(23%)	(32%)
(b) government and users	(1%)	(0%)
(c) government and industry	(5%)	(2%)
(d) government and other	(6%)	(1%)
B. Users	31%	26%
(a) users, general	(2%)	(1%)
(b) licence fees, general	(22%)	(16%)
(c) licence fees, non-residents only	(6%)	(7%)
(d) licence fees all users, non-residents pay more	(1%)	(3%)
C. Industry	10%	5%
(a) industry, general	(9%)	(3%)
(b) industry and users	(1%)	(2%)
D. Habitat Destroyers	2%	1%
E. More than one of the above	7%	12%
F. Other*	15%	14%
Total	100%	100%
Sample Size (n=)	113	234

* Other: donations
lottery funds
fines for abuse of wildlife

3.4.3 Summary of Findings

Of the 669 Coal Block households that were surveyed by telephone, 45% participated in the non-hunting use of wildlife in 1980. It is assumed that the same proportion of Cranbrook and Kimberley households participated in non-hunting use as did in the Coal Block.

Forty-two percent of the residents of the Coal Block communities enjoyed the non-hunting use of wildlife in 1980. The average number of viewers in each Coal Block household that participated, from an average household size of 3.2, was 3.0.

Forty-five percent of the residents of Cranbrook and Kimberley enjoyed the non-hunting use of wildlife in 1980. The average number of viewers in each household that participated was 3.2.

The big game animal most enjoyed by both Coal Block and Cranbrook/Kimberley viewers was elk, followed by deer, moose, and bighorn sheep. The birds most enjoyed by those viewers were waterfowl and raptors.

Viewing or watching wildlife was the most popular non-hunting activity, followed by photographing, drawing or painting, and studying nature. Of the residents who participated in the above non-hunting uses of wildlife in 1980, 94% from the Coal Block and 87% from Cranbrook and Kimberley made a special effort to do so. The total number of days spent by residents who made a special effort to view, draw, and/or photograph wildlife in 1980 exceeded 200,000 days in each study population.

The average number of days spent viewing or watching wildlife only by each Coal Block resident who made a special effort to view, draw, and/or photograph in 1980 was 40 days, and by each Cranbrook/Kimberley resident was 27 days.

Forty-five percent of the Coal Block residents who made a special effort to view, draw or photograph wildlife in 1980 did so once a week or more, while forty-four percent of the Cranbrook/Kimberley residents who made a special effort to participate in one or more of those activities did so once a month.

When making a special effort to view, draw or photograph wildlife, Coal Block residents travelled a shorter distance than did Cranbrook/Kimberley residents (66% and 48% of the Coal Block and Cranbrook/Kimberley viewers, respectively, travelled a one-way distance of less than 50 kilometers).

Summer was Coal Block and Cranbrook/Kimberley viewers' favourite season for enjoying the non-hunting use of wildlife.

Most Coal Block and Cranbrook/Kimberley viewers associated travelling by car and day hikes or walks with the non-hunting use of wildlife.

The majority of Coal Block and Cranbrook/Kimberley viewers thought opportunities for the non-hunting use of wildlife need to be improved. Most of them thought the strict control of dogs and snowmobiles during winter months or the creation of small no hunting areas would improve those opportunities.

Most Coal Block and Cranbrook/Kimberley viewers thought elk should receive the most attention for habitat restoration and enhancement.

Most Coal Block and Cranbrook/Kimberley viewers thought wildlife habitat restoration and enhancement projects should be funded by government, and that those funds should be raised either through regular government programmes or through the sale of hunting licences. It appears that the viewers who chose the latter method of raising funds thought money raised through the sale of licences should be put directly into wildlife management, rather than into general revenue.

Chapter Four *Conclusion*

The results of this study indicate a high level of participation by Coal Block and Cranbrook/Kimberley residents in outdoor recreation activities. The majority of time spent by those residents in recreational pursuits during 1980 was within the Kootenay Region.

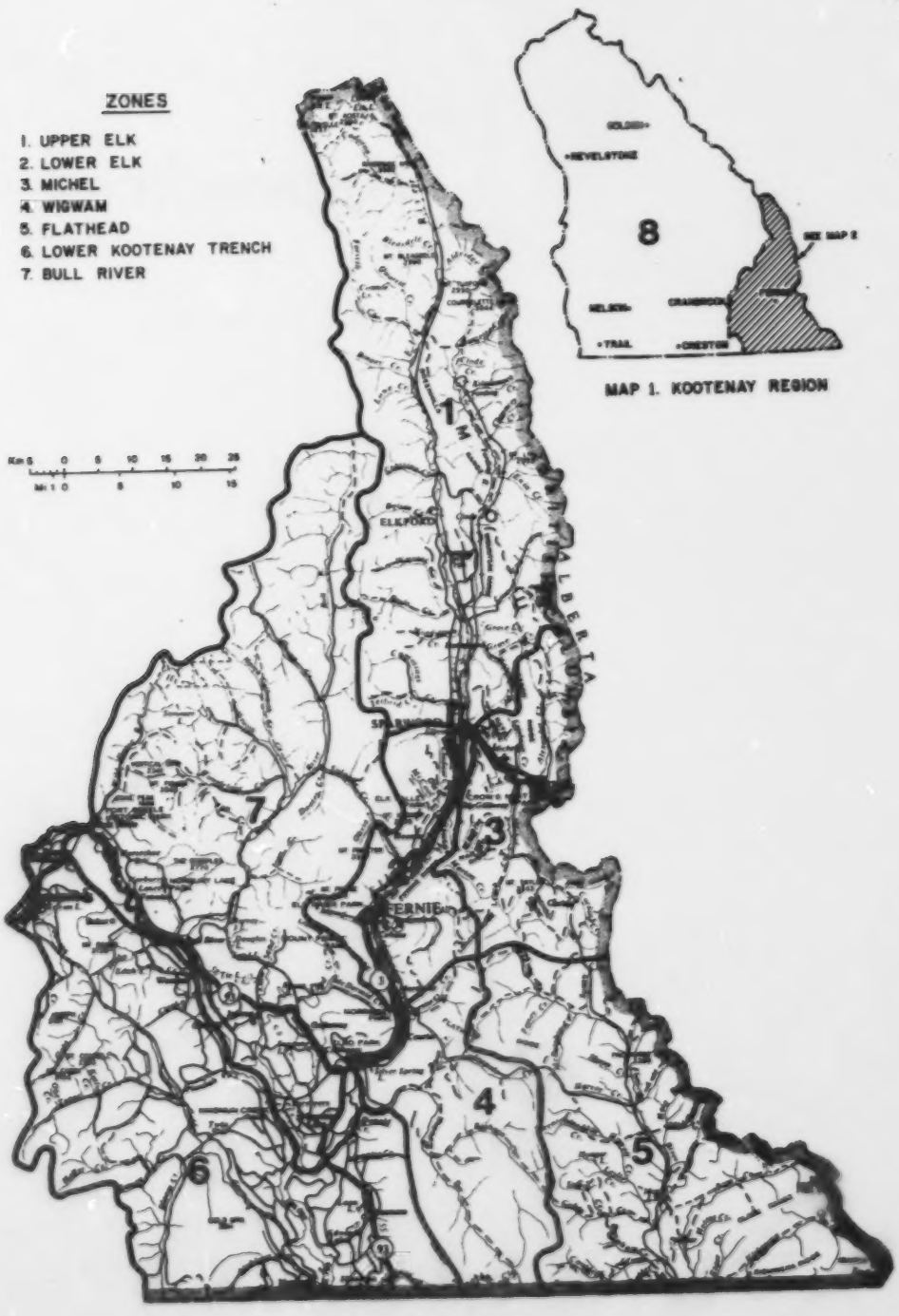
It should be recognized that this study consisted of two distinct surveys, each of which produced separate estimates of recreational use. Minor discrepancies are apparent in both the estimates of activity days and the ranking of activities. It is not possible to determine which set of estimates is more reliable. One major discrepancy relates to wildlife - based recreation, and may have resulted from hunting and viewing being regarded as one activity in the telephone survey, whereas they were treated separately in the mail survey.

The day-use figures obtained from the two surveys may be over-estimates, since public surveys of this kind are known to have a slight upward bias. As long as this problem is acknowledged when deriving interpretations from the data, the surveys provide valuable new information on levels of recreational use in the study area. The information on the relative differences in use between various recreational activities is as important as the total use information, and is perhaps more statistically reliable.

As noted in the introduction to this report, the information obtained from the study will be used in the development of resource management plans for the Southeast Coal Block. In particular, the information on present recreational use and public attitudes towards resource management will be one of the factors considered in the development of conservation and recreation programmes for the area.

Appendices

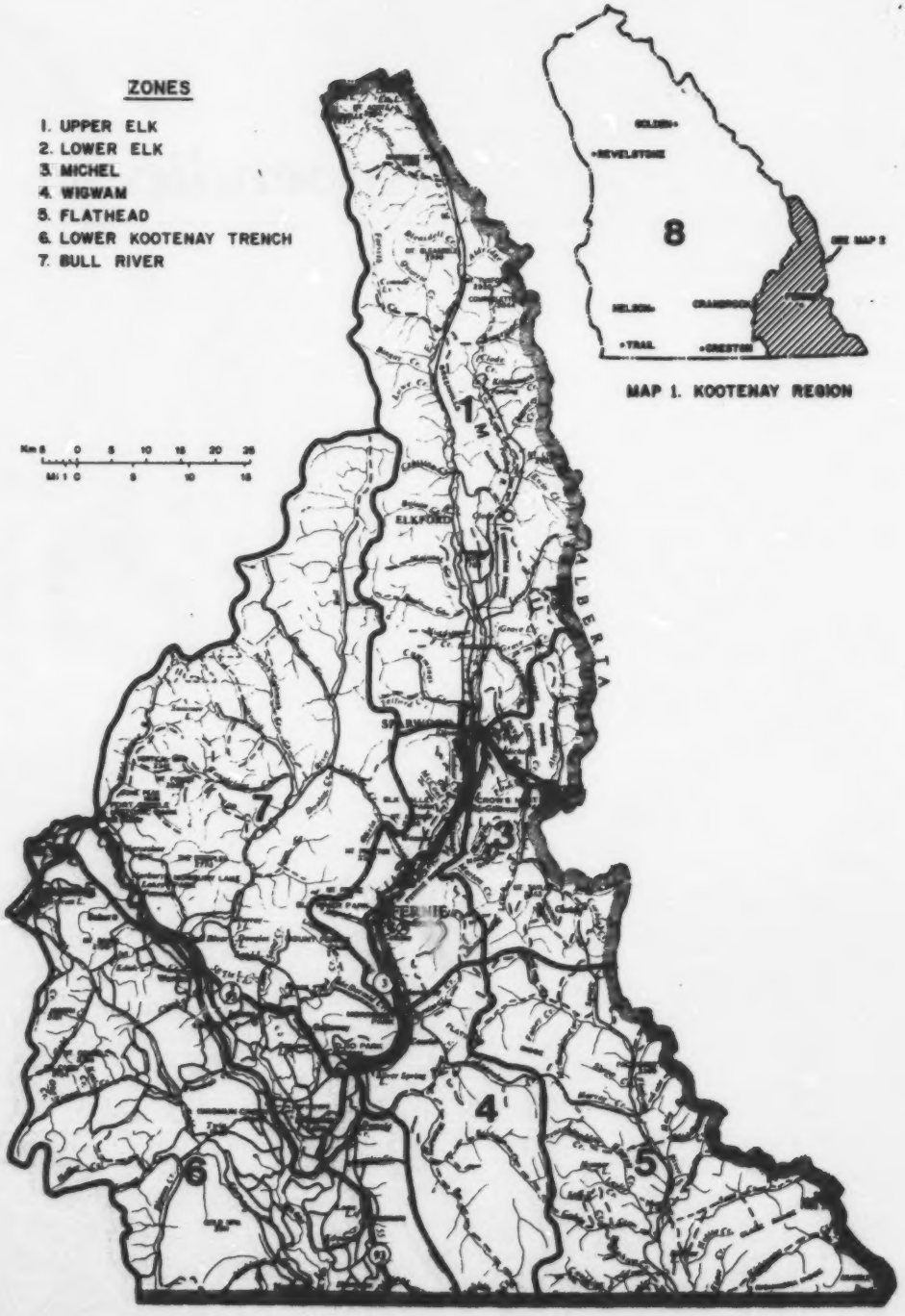
Original Study Area Maps



MAP 2

Appendices

Original Study Area Maps



MAP 1. KOOTENAY REGION

MAP 2

Appendix A: Survey Questionnaires

Telephone Survey:

```
##>              Telephone Questionnaire Data-entry System
##>              ========= ============== =========== ======
##>
##>
##>         Prepared by: Mike Baker
##>                      Research and Program Analysis
##>                      387-5044
##>         Initiated:   80/10/02
##>         Version:     80/10/02#02
##>
##> This procedure was installed on the BCSC IBM mainframe using the WYLBUR
##> timesharing facility.  The actual machine instructions are coded as a
##> WYLBUR execute file which is called up when the surveyor types the
##> following command sequence:
##>
##>         EXECUTE FROM QUESTION CLEAR
##>
##> The documentation which follows summarizes the dialogue which takes
##> place between the surveyor and the WYLBUR execute file.  In each case,
##> the computer's prompt(s) is(are) followed by a brief explanation of
##> what is happening.  For clarity, lines preceeded by '##>' are comments
##> about some previous action by the computer.
##>
##> Following the surveyor <-> computer dialogue is a detailed listing of
##> all the questionnaire-specific prompts which are displayed to the
##> surveyor.  These prompts would be changed when a different
##> questionnaire is to be used.
##>
##>
##>-------------------------------------------------------------------------
##>
##>
   COMM
   COMM                          TELEPHONE  QUESTIONNAIRE
   COMM                          DIRECT DATA ENTRY SYSTEM
   COMM
   REA STR S0 PRO'     Do you want any directions? ==>'
##>
##> If the response begins with 'Y', then these directions follow:
##>
   COMM                              <<<  DIRECTIONS  >>>
   COMM
   COMM            When the screen has filled up with prompts and your
   COMM            responses, the message 'MORE...' will appear at the
   COMM            bottom, right-hand corner.  Press <ENTER> and the
   COMM            prompts will begin again at the top of the screen.  Try
   COMM            to ignore the garbage that is still there at the bottom
   COMM            of the screen -- WYLBUR won't let you clean it up.
   COMM
```

```
   COMM          You will be presented with prompts for each of the
   COMM          questions as they occur on the questionnaire. As you
   COMM          answer the prompt, your response on the keyboard will
   COMM          be echoed onto the screen.  You can then edit your
   COMM          response by backspacing over the mistake and retyping.
   COMM          When you are satisfied with the result, press the
   COMM          <ENTER> key to record the new data into the file.  Once
   COMM          you have pressed <ENTER> no more editing is possible
   COMM          and any mistakes will plague you until you bug Mike to
   COMM          fix them.
   COMM
   COMM          When replying to prompts, abbreviations may be used:
   COMM
   COMM                YES or  Y or y
   COMM                 NO or  N or n or <ENTER>
   COMM                001 or 01 or 1
   COMM
   COMM          O.K., here we go.  Press <ENTER> when you're  ready  to
   COMM          start...
   COMM
   REA STR 50 PRO' Ready... ?? ==> '
&&>
&&> At this point, if the surveyor were not yet prepared for the session a
&&> response of <BREAK> would exit the program, otherwise the above
&&> directions will remain displayed until any other response is made.
&&> (This allows the surveyor to take a breather or get papers organized.)
&&>
&&> As soon as a response, other than <BREAK>, has been made the surveyor
&&> is presented with a sequence of questionnaire-related prompts (see
&&> prompt-file which follows).  These prompts are not intended to be  read
&&> verbatim  to  the respondant over the telephone; rather they are merely
&&> cues to the surveyor which indicate the next question to be asked.  The
&&> actual wording comes from the questionnaire itself.
&&>
   COMM
   COMM    &(SUBST(59,2,59))
   LIST 85/96 UNN                              ; list all the possible codes
   COMM
   REA STR 88 PRO' householder''s occupation code? ==>'
&&>
&&> At this point, near the end of the questionnaire, a more detailed
&&> prompt than usual is generated because of the complexity of the
&&> question.  A table of codes is displayed from which the surveyor must
&&> choose one that most closely matches the respondant's answer.
&&>
   COMM          . . . recorded!
&&>
&&> Since  there may be more than one response in the  household  for  this
&&> question,  the prompt will reappear until the surveyor indicates all
&&> data is in by responding with "00".  Also, as each data element for the
&&> question is entered, the computer signifies readiness for the next  one
&&> with the, ". . . recorded!", comment.
   COMM
   COMM  Questionnaire &1(SUBST(87,1,4)) has been added to the data-file
   COMM
```

```
##>
##> Here, the surveyor is informed that data from the current questionnaire
##> has just been added to the data-file.
##>
   REA STR S0 PRO' Another questionnaire? ==>'
##>
##> If there are no more questionnaires this session, make a response
##> beginning with 'N' otherwise with a 'Y'. A positive response will
##> repeat the whole process over again.
##>
   COMM
   COMM       This session is terminating. Please stand-by while I
   COMM       put back your newly updated data-file. I'll let you
   COMM       know when I'm done...
##>
##> Since there are no more questionnaires to enter at this time, the
##> updated questionnaire data-file is replaced into the computer and the
##> surveyor is disconnected.
##>
   COMM
   COMM       ... wow! You have %(NCONV(LAST)) questionnaires now.
   COMM
##>
##> This message informs the surveyor how many questionnaires now reside
##> in the data-file.
##>
   COMM  ->>> ALL DONE <<<-
   COMM                    Now all you need to do is wait until the
   COMM                    screen clears and you see the BCSC logo,
   COMM                    then turn down the brightness knob and go
   COMM                    home.  If you are on the DecWriter, don't
   COMM                    forget to hang-up the telephone and turn
   COMM                    off the power.
   COMM          >>> Press <ENTER> to finish
   REA STR S0 PRO' ... bye'
##>
##> This is the final sequence of messages to the surveyor before the
##> computer disconnects.
##>
   COMM
   COMM          * * *  A program error has occurred  * * *
   COMM
   COMM     The last questionnaire successfully entered completely was
   COMM     # %S0.  Let's begin again with the next one...
   COMM
##>
##> In the event that something occurs which the program cannot remedy
##> internally, this message appears before control is transferred to back
##> to the point used for new-questionnaire entry. Since this will result
##> in confusion on the part of the respondant if questions are repeated,
##> the surveyor will instead carry on with the rest of the questionnaire
##> using a manual entry form. Data from this manual entry form will be
##> added to the data-file at a later time.
##>
```

```
   COMM  *                                                        *
   COMM     Apparently you would like to get out of the restricted
   COMM     mode of this module.   If not, simply enter 'CONT' and
   COMM     I will continue where we left off.  Otherwise you must
   COMM     know the secret command... (snicker)
   COMM  *                                                        *
   REA STR S0 PRO' Command? (CONT or ??) ==>'
##>
##> In order to prevent unanticipated alteration of the data-file, the
##> computer terminal's <BREAK> key will only lead the surveyor to this
##> point. Any response other than 'CONT' will result in automatic
##> disconnection from the computer.
##>
```

Automated Telephone Questionnaire data-entry

```
##>
##>                    Prompt-file
##>                  for automated entry
##>                       of
##>                Telephone Questionnaire
##>                  survey data-entry
##>                ======================
##>
##>   +--- Paraphrase of question (for prompt to surveyor) ----+
##>   |                                                        |
##>   |  These are indented to reflect the heirarchical        |
##>   |  relationship of questions within the questionnaire.   |
##>   |  Any prompt indented further than its predecessor      |
##>   |  will only be displayed by the computer if the         |
##>   |  response to the preceding question requires it.       |
##>   |                                                        |
##>   |  For example, if there are no camping householders     |
##>   |               in the first question, then no further   |
##>   |               prompts regarding camping will be        |
##>   |               displayed and appropriate response-      |
##>   |               data will be inserted automatically      |
##>   |               into the data-file.                      |
##>   V                                                        V
##>
```

```
Respondent # . . . . . ==>
# Any householders go camping? . . . . . ==>
-   ... in undeveloped sites? . . . . . ==>
-   ... in private campgrounds? . . . . . ==>
-   ... in B.C. Forestry sites? . . . . . ==>
-   ... in B.C. Provincial Parks? . . . . . ==>
    # nights camping? . . . . . ==>
    # householders per trip? . . . . . ==>
# Any householders go boating? . . . . . ==>
#   Go canoeing? . . . . . ==>
      # canoes owned? . . . . . ==>
      # times canoeing? . . . . . ==>
      # householders per trip? . . . . . ==>
#   Go kayaking? . . . . . ==>
      # kayaks owned? . . . . . ==>
      # times kayaking? . . . . . ==>
      # householders per trip? . . . . . ==>
#   Go sailing? . . . . . ==>
      # sailboats owned?. . . . . ==>
      # times sailing? . . . . . ==>
      # householders per trip? . . . . . ==>
#   Go power-boating? . . . . . ==>
      # power-boats owned? . . . . . ==>
      # times power-boating? . . . . . ==>
      # householders per trip? . . . . . ==>
-     Go water-skiing? . . . . . ==>
# Any householders go to the beach? . . . . . ==>
    # times to the beach? . . . . . ==>
    # householders per trip? . . . . . ==>
```

Automated Telephone Questionnaire data-entry

* Any householders do hiking within last 12 months? . ==>
* Go on day trips? . . . . . ==>
# day trips? . . . . . ==>
# householders per trip? . . . . . ==>
* Go on overnight trips? . . . . . ==>
# overnight trips?. . . . . ==>
# householders per trip? . . . . . ==>
* Go mountain climbing? . . . . . ==>
# days done mountain climbing? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do fishing within last 12 months?. ==>
# days spent fishing? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do hunting or viewing wildlife? . ==>
# days spent viewing/hunting? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do trail-riding? . . . . . ==>
# days spent trail-riding? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do off-road driving? . . . . . ==>
* Go trail-biking? . . . . . ==>
# times spent biking? . . . . . ==>
# householders per trip? . . . . . ==>
# trail-bikes owned? . . . . . ==>
* Go four-wheeling? . . . . . ==>
# times spent four-wheeling? . . . . . ==>
# householders per trip? . . . . . ==>
\- own four-wheel drive vehicle? . . . . . ==>
* Any householder do skiing? . . . . . ==>
* Go downhill? . . . . . ==>
# times? . . . . . ==>
# householders per trip? . . . . . ==>
* Go cross-country? . . . . . ==>
# times? . . . . . ==>
# householders per trip? . . . . . ==>
* Go ski-touring? . . . . . ==>
# days spent touring? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do snowmobiling? . . . . . ==>
# times snowmobiling? . . . . . ==>
# householders per trip? . . . . . ==>
# snowmobiles owned?. . . . . ==>
* Any householders do snow-shoeing? . . . . . ==>
# times? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do Winter camping? . . . . . ==>
# nights camping? . . . . . ==>
# householders per trip? . . . . . ==>
* Any householders do tobogganning? . . . . . ==>
# times tobogganning? . . . . . ==>
# householders per trip? . . . . . ==>

Automated Telephone Questionnaire data-entry

```
#  Any householders go ice-fishing? . . . . . ==>
     # times ice-fishing?. . . . . ==>
     # householders per trip? . . . . . ==>

@  Type of occupations (enter '00' when done):
Not stated, omitted                01   Farm, Hort., Husbandry
Managerial, Administrative         11   Fishing, Trapping
Nat. Sc., Eng., Math., Arch.       21   Forestry, Logging
Social Sciences                    23   Mining, Quarry
Religion                           25   Processing occupations
Teaching                           27   Machinery
Medicine & Health                  31   Fabrication, Assembly, Repair
Art, Lit., Perform. arts           33   Construction
Sport & Recreation                 37   Transport'n. Equip't. Oper.
Clerical                           41   Materials handling
Sales                              51   Other crafts & equip't.
Service                            61   Not elsewhere classified
   # householders employed by the coal-mining industry? ==>
   # years in the East Kootenays for this household? .  ==>
 DONE

!!>  ============================================================
```

Mail Survey:

Outdoor Recreation

1. Please read the list of activities below and a) circle the letter opposite each activity in which members of your household have participated, b) rank the five activities most important to members of your household (1 = most important), and c) indicate the number of days in the past year members of your household participated in each of the activities you ranked 1 to 5.

ACTIVITY	a. Activities participated in (Please circle)	b. Most Important activities Rank 1-5	c. Number of days in past year
Camping	A	____	____
Canoeing	B	____	____
Kayaking	C	____	____
Sailing	D	____	____
Power Boating	E	____	____
Beach Visits	F	____	____
Day Hiking	G	____	____
Overnight Hiking	H	____	____
Mountain Climbing	I	____	____
Fishing	J	____	____
Hunting	K	____	____
Viewing Wildlife	L	____	____
Trailriding (Horseback)	M	____	____
Trailbiking	N	____	____
Off-Road 4-Wheel Driving	O	____	____
Downhill Skiing	P	____	____
Cross-Country Skiing	Q	____	____
Ski-Touring	R	____	____
Snowmobiling	S	____	____
Snowshoeing	T	____	____
Winter Camping	U	____	____
Tobogganing	V	____	____

You will need to refer to Maps 1 and 2 to answer Question 2.

2. For each of the activities ranked 1 to 5 in Question 1, please indicate the number of days you participated in each activity in the Kootenay Region (Zones 1-7 plus Zone 8) and in each of the eight zones. Please also indicate the names of sites you visited most often.

Activity Ranked	Total Days in Kootenay Reg.	No. Days in each Zone 1	2	3	4	5	6	7	8	Sites visited most often
1	(39-40)	41							56	
2	(60-61)	62							77	
3	(7-8)	9							24	
4	(28-29)	30							45	
5	(49-50)	51							66	

3. Please indicate the number of nights members of your household camped in the Kootenay Region at each of the following types of sites in the past year.

	Number of nights past year
Undeveloped sites	☐☐
Private campgrounds	☐☐
B.C. Forest Service campgrounds...	☐☐
Provincial Parks.....	☐☐

4. Where do the members of your household camp most often?

Name of area: _____

5. Do members of your household think additional campgrounds are needed or any existing sites need improvement? If yes, where?

_____

_____

_____

6. What would the members of your household do if their favourite, most frequently visited, recreation areas in the Kootenays were used more often by other people? Please circle only one response.

	Circle
Do nothing	1
Go elsewhere	2, where? _____
	_____
Take up other activities	3, what? _____
	_____

Recreation conflicts may occur when a single area is used for two or more activities at the same time, for example, when waterskiers and fishermen are using the same lake or when cross-country skiers and snowmobilers are using the same trails.

7. Have you or other members of your household ever experienced recreation conflicts in the Kootenay Region? You may use the space below to describe your experiences. Please state where (Zone number) and when each conflict occurred.

_____

_____

_____

_____

_____

_____

8. Do members of your household ever recreate in Zone 5, the Flathead area?

	Circle
Yes.....	1
No.....	2 (Skip to Q.15)

9. Are your present visits usually day trips or overnight trips?

	Circle
Day trips.....	1
Overnight trips..	2

10. Do you use the Lodgepole/Harvey road to get into the Flathead area?

	Circle
Yes.....	1
No.....	2 (Skip to Q.15)

11. Would the members of your household continue to recreate in the Flathead area if the Lodgepole/Harvey access road was closed?

	Circle
Yes.....	1 (Go on to Q.12)
No.....	2 (Skip to Q.14)

12. How would you get there?

_____

13. Would you stay longer once there?

	Circle
Yes.....	1 (Skip to Q.15)
No.....	2 (Skip to Q.15)

14. Where would you go instead?

_____

To help us analyse the results of this study we would like to know a little about your household.

15. What best describes your household?

	Circle
Family.....	1
Couple.....	2
Single Person.....	3
Friends.....	4

16. Please indicate the number of people in each age group living in your household.

	9 years and under	10-14 years	15-19 years	20-34 years	35-64 years	65 years and over
	(28)	(29)	(30)	(31)	(32)	(33)
Females						
Males						
	(34)	(35)	(36)	(37)	(38)	(39)

17. Do any members of your household belong to organized outdoor recreation groups? If yes, please indicate which ones.

	Circle		Circle
B.C. Wildlife Federation.....	A	Fernie & District Rod and Gun Club	K
Cranbrook District Rod and Gun Club.....	B	Four Wheel Drive Assoc. of B.C..	L
Cranbrook Field Naturalists....	C	Kimberley Wildlife Club.....	M
Elkford Rod and Gun Club.....	D	Outdoor Rec. Council of B.C.....	N
Elk Valley 4x4 Mountain Cats...	E	Silver Tip Cross-Country Ski Club	O
Elk Valley Mountaineers.....	F	Sparwood & District Fish &..... Wildlife Association	P
Elk Valley Racing Team.....	G	The Pass Muzzle Loaders.....	Q
Elk Valley Recreation Council..	H	Wardner Rod and Gun Club.....	R
Federation of B.C. Naturalists..	I		

THANK YOU FOR YOUR ASSISTANCE.

IF ANY MEMBERS OF YOUR HOUSEHOLD FISH, HUNT, OR VIEW WILDLIFE, PLEASE BE SURE TO COMPLETE THE APPROPRIATE ENCLOSED QUESTIONNAIRES.

PLEASE RETURN ALL QUESTIONNAIRES AS SOON AS POSSIBLE IN THE SELF-ADDRESSED, POSTAGE-PAID ENVELOPE ENCLOSED.

Fishing

These questions should be answered by one of the anglers of this household.

1. How many members of your household fished in the past year?

   Number of People ☐☐

2. How many of the anglers of your household are 15 years of age or younger?

   Number age 15 or younger ☐☐

3. How many days in the past year did the anglers of your household fish inside and outside of British Columbia?

   Days fished in B.C. ☐☐☐

   Days fished outside B.C. ☐☐☐

If none of the members of your household fished in the Kootenay Region (Map 1) during the past year please skip to Question 11.

4. How many days in the past year did the anglers of your household go lake fishing and stream fishing in the Kootenay Region (Map 1)?

   No. of Days Lake Fishing ☐☐☐

   No. of Days Stream Fishing ☐☐☐

5. How many days in the past year did the anglers of your household fish in Zones 1-5 and how many days in Zones 6-8 (Maps 1 and 2)?

   Zones 1-5 ☐☐☐

   Zones 6-8 ☐☐☐

6. (a) Please circle the zone(s) in which the anglers of your household fish.
   (b) Next, rank the zones in which you most prefer to fish. (1 = most preferred)
   (c) For each of the zones in which you fish, please circle whether you usually stream fish or lake fish.

Zones Fished	Zones Preferred	Type of Fishing (Please circle the type you do most often)	
Circle	Rank	Stream	Lake
1 - Upper Elk.....	_____	.....1..... or	2
2 - Lower Elk.....	_____	.....1..... or	2
3 - Michel.....	_____	.....1..... or	2
4 - Wigwam.....	_____	.....1..... or	2
5 - Flathead.....	_____	.....1..... or	2
6 - Lower Trench....	_____	.....1..... or	2
7 - Bull River.....	_____	.....1..... or	2
8 - Rest of Region..	_____	.....1..... or	2

7. Why do you fish in the Kootenay Region (Map 1)? _____

   _____

8. Please indicate in which month(s) the anglers of your household fish in the Kootenay Region (Map 1) for each of the following species.

	Months Fished (Please circle)		Do not Fish
Rainbow Trout	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐
Yellowstone Cutthroat	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐
Brook Trout	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐
Dolly Varden	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐
Kokanee	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐
Mountain Whitefish	J F M A M J J A S O N D 01 02 03 04 05 06 07 08 09 10 11 12	OR	☐

9. When does your household do most of its fishing in the Kootenay Region? Please rank your answers 1 (most common) to 3 (least common).

	Rank
On holidays.....	___
On overnight trips.....	___
On day trips.....	___

10. Are the anglers of your household satisfied with the catch and possession limits set out in the present fishing regulations?

	Circle
Yes.....	1
No.....	2

If you answered "No", please tell us why you are not satisfied.

_____

_____

11. How often do you, yourself, (not the anglers of your household) catch your daily limit?

	Circle
Always.....	1
Usually.....	2
Seldom.....	3
Never.....	4

12. If the chance of catching fish in the Kootenay Region decreased, what would the anglers of your household do? Please check only one response.

	Circle
Continue to fish in the same spots....	1
Fish in other parts of the region.....	2
Fish in another part of the province..	3
Fish in Alberta or the U.S.....	4
Stop fishing.....	5
Other	6

(please explain)_____

_____

Population growth and further resource development in the Kootenays will result in increased pressures on sport fish populations. In an attempt to provide enough fishing opportunities to meet increased demand, two types of fisheries management programs could be considered. These programs are 1) habitat restoration (e.g. erosion control, debris removal), and 2) enhancement (e.g. lake stocking, provision of spawning, rearing and overwintering habitats).

13. In the opinion of the anglers of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important) and 3 (third most important).

	Rank (1-3)
1) Rainbow Trout.....	___
2) Yellowstone Cutthroat..	___
3) Brook Trout.....	___
4) Dolly Varden.....	___
5) Kokanee.....	___
6) Mountain Whitefish.....	___

14. Who do the anglers of your household think should fund habitat restoration and enhancement projects?

_____

How do the anglers of your household think these funds should be raised?

_____

15. If it is determined that harvest must be controlled to maintain fish populations, even after habitat restoration and enhancement activities have been carried out, which three options would the anglers of your household prefer? Please rank your answers 1 (most preferred) to 3 (least preferred).

Options	Rank (1-3)
1) Restrict fishing seasons	___
2) Restrict gear types	___
3) Reduce catch and possession limits	___
4) Establish size limits	___
5) Close areas on alternate years to allow natural stocks to rebuild	___
6) Limit road access	___
7) Other	___

(please explain)_____

_____

Hunting

These questions should be answered by one of the hunters in your household.

1. How many members of your household hunted in past year?

   Number of people ☐☐

2. How many days in the past year did the members of your household hunt inside and outside British Columbia?

   Number of days hunted in B.C. ☐☐

   Number of days hunted outside B.C. ☐☐

If none of the members of your household went hunting in Zones 1-8 during the past year, please skip to Question 7.

3. Why do the members of your household hunt in the Kootenay Region?

   _____

   _____

4. a) Please circle all the species that members of your household hunted in the Kootenay Region (Map 1) during the past year.
   b) Success rate refers to the number of days required to harvest an animal. Please indicate your households's level of satisfaction with your current success rates for each of the species you hunted. Circle whether you are satisfied, somewhat satisfied, or dissatisfied with your success rates.

a) Species that you hunted (Circle)		b) Levels of Satisfaction (Circle one response only)		
		Satisfied	Satisfied	Dissatisfied
Elk	01	1	SW 2	3
Moose	02	1	SW 2	3
White-tailed Deer	03	1	SW 2	3
Mule Deer	04	1	SW 2	3
Sheep	05	1	SW 2	3
Goat	06	1	SW 2	3
Black Bear	07	1	SW 2	3
Grizzly Bear	08	1	SW 2	3
Cougar	09	1	SW 2	3
Waterfowl	10	1	SW 2	3
Upland Game Birds	11	1	SW 2	3

5. *You will need to use Maps 1 and 2 to answer this question.*

   Please indicate the number of days members of your household hunted each species in each zone. For example, if 4 people from your household hunted mule deer two days in Zone 5 and three days in Zone 7 you would put '8' (4 people x 2 days) in the Zone 5 column and '12' (4 people x 3 days) in the Zone 7 column on the "Mule Deer" row. (See example)

SPECIES	ZONE 1 Upper Elk	2 Lower Elk	3 Michel	4 Wigwam	5 Flat-head	6 Lower Trench	7 Bull R.	8 Rest of Region
Example-Mule Deer					8		12	
Elk								
Moose								
White-tailed Deer								
Mule Deer								
Mountain Sheep								
Mountain Goat								
Black Bear								
Grizzly Bear								
Cougar								
Waterfowl								
Upland Game Birds								

6. What would the hunters from your household do if the chance of bagging a big game animal in the zones in which you usually hunt decreased? Circle only one response.

	Circle (one response only)
Continue to hunt in the same areas	1
Hunt the same species elsewhere in the Kootenay	2
Hunt same species elsewhere in B.C.	3
Change from hunting big game to hunting small game, upland game birds, or waterfowl	4
Stop hunting	5
Enjoy only the non-hunting use of wildlife	6
Other (please explain)_____	7

Population growth and further resource development in the Kootenays will result in increased pressures on wildlife populations. In an attempt to provide enough hunting opportunity to meet demand, two types of wildlife management programs could be considered. These programs are 1) habitat restoration (eg rehabilitation of disturbed habitat, government purchase of prime wildlife habitat), and 2) enhancement (e.g. prescribed burning, planting of browse species).

7. In the opinion of the hunters of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important), 3 (third most important).

	Rank (1-3)
1. Elk.....	___
2. Moose.....	___
3. White-tail Deer.....	___
4. Mule Deer.....	___
5. Mountain Sheep.....	___
6. Mountain Goat.....	___
7. Black Bear.....	___
8. Grizzly Bear.....	___
9. Cougar.....	___
10. Waterfowl.....	___
11. Game Birds.....	___

8. Who do you think should fund habitat restoration and enhancement projects?

_____

_____

How do you think these funds should be raised?

_____

_____

9. If it is determined that harvest must be controlled to maintain wildlife populations, even after habitat restoration and enhancement activities have been carried out, which three options would the hunters of your household prefer? Please rank your answers 1 (most preferred) to 3 (third most preferred).

	Rank (1-3)
1. Reduce length of hunting season.....	___
2. Reduce bag limits.....	___
3. Establish quotas for residents (e.g. limited entry hunts).....	___
4. Decrease quotas for non-residents (e.g. 1 animal every 5 years, 1 animal in a lifetime).....	___
5. Temporary hunting closures.....	___
6. Permanent hunting closures.....	___
7. Limit road access.....	___
8. Other	___

(please explain)_____

_____

_____

_____

Thank you.

Non-Hunting Use of Wildlife

These questions should be answered by a member of the household who views, draws or photographs wildlife in the natural habitat.

1. How many members of your household enjoyed the non-hunting use of wildlife in the past year?

   Number of people ☐☐

2. Which big and small game species do the viewers of your household most enjoy? Please circle up to three big game animals and up to three small game animals.

Big Game	Circle (up to 3 only)	Birds/Small Game	Circle (up to 3 only)
Elk	1	Upland Game Birds (e.g. grouse, pheasant, quail)	1
Moose	2	Waterfowl (e.g. ducks, geese)	2
Deer	3	Raptors (e.g. hawks, eagles)	3
Mountain Sheep	4	Song Birds	4
Mountain Goat	5	Other (please explain)	5
Black Bear	6	_____	
Grizzly Bear	7	_____	
Cougar	8	_____	

3. Approximately how many days did the viewers of your household enjoy each of the following non-hunting uses of wildlife in the past year?

	No. of days in past year
Photographing	☐☐
Drawing/Painting	☐☐
Viewing/Watching	☐☐
Nature Study	☐☐
Other	☐☐

(please explain)_____

_____

4. What is your favourite season for enjoying the non-hunting use of wildlife? Please circle only one response.

	Circle
Winter	1
Spring	2
Summer	3
Autumn	4

5. How often did the members of your household make a special effort to view, draw, or photograph wildlife in the past year?

	Circle	
About once per week or more	1	
About once per month	2	
About once per season	3	
Never	4	(Skip to Q.7)

6. When you make a special effort to view wildlife in its natural habitat how far, one-way, do the members of your household usually travel?

	Circle
Up to 25 km (up to 16 miles)	1
26 to 50 km (17 to 31 miles)	2
51 to 75 km (32 to 47 miles)	3
76 km or more (48 miles or more)	4

7. What other activities do members of your household associate with the non-hunting use of wildlife? You may circle up to three responses.

	Circle
Travelling by Car	1
Day Hikes/Walks	2
Overnight Hikes/Camping	3
Snowmobiling	4
Skiing	5
Snowshoeing	6
Other	7

(please explain)_____

_____

8. Do members of your household feel opportunities for the non-hunting use of wildlife need to be improved?

	Circle	
Yes	1	
No	2	(Skip to Q.10)

9. How do you think opportunities for non-hunting use of wildlife should be improved? Please circle the options you would most like to see implemented.

	Circle
Construction of road pull-offs and viewing stands.....	1
Creation of small no hunting areas (to allow year-round viewing).....	2
Strictly control dogs and snowmobiles during winter months to reduce harassment.....	3
Other	4

(please explain)_____

_____

Population growth and further resource development in the Kootenays will result in increased pressures on wildlife populations. In an attempt to provide enough hunting opportunity to meet demand, two types of wildlife management programs could be considered. These programs are 1) habitat restoration (eg rehabilitation of disturbed habitat, government purchase of prime wildlife habitat), and 2) enhancement (e.g. prescribed burning and planting of browse species).

10. Which 3 species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? (Map 1) Please rank your answers 1 (most important), 2 (second most important), 3 (third most important).

	Rank (1-3)
01) Elk	___
02) Moose	___
03) Deer	___
04) Mountain Sheep	___
05) Mountain Goat	___
06) Black Bear	___
07) Grizzly Bear	___
08) Cougar	___
09) Waterfowl	___
10) Game Birds	___

11. Who do you think should fund habitat restoration and enhancement projects?

_____

_____

How do you think these funds should be raised?

_____

_____

Thank you

Appendix B: Glossary

activity days	- number of days spent participating in an activity by one member of a household.
anglers	- anglers in the households surveyed.
angling days	- number of days spent participating in recreational fishing by the study populations.
bag limit	- the maximum number of each species or species aggregate of big game, small game, or game birds that a person may take in a licence year, according to government regulations.
big game	- mountain sheep, mountain goat, caribou, elk, moose, deer, grizzly bear, black bear, cougar, wolf, or any other mammal designated by government regulation.
catch limit	- maximum number of each species of fish, or species aggregate, that a person may retain in one day, according to government regulations.
daily limit	- see catch limit.
estimated activity days	- estimated number of days spent participating in an activity by the total population, based on the number of activity days that the study population spent participating in that activitiy (see Appendix C.7).
fishing regulations	- refers to British Columbia Fishing Regulations Synopsis for Non-Tidal Waters, 1980-1981, B.C. Ministry of Environment, Fish and Wildlife Branch.
fishing season	- time(s) of year when fishing is permitted to occur for different species in particular drainages, as defined in the fishing regulations.
game birds	- any grouse, partridge, quail, pheasant, ptarmigan, migratory game bird (e.g. waterfowl, coot, common snipe, band-tailed pigeon, mourning dove), or any other bird designated by government regulation.
habitat enhancement	- activities which result in the improvement of fish or wildlife habitat e.g. provision of spawning area, prescribed burning of wildlife habitat.

habitat restoration - activities which result in the rehabilitation of fish or wildlife habitat disturbed through natural or human activities e.g. barrier removal in streams.

household days - number of days spent participating in an activity by one or more members of a household.

hunters - hunters in the households surveyed.

hunting closures - closure of areas to hunting.

hunting days - number of days spent participating in hunting by the study populations.

hunting season - time of year when hunting is permitted to occur for different species in particular geographic areas, as defined in the British Columbia Hunting Regulations Synopsis, 1980-1981, B.C. Ministry of Environment, Fish and Wildlife Branch.

Kootenay Region - one of the resource management regions used by several British Columbia Provincial Government agencies for resource administration. The Kootenay Region is situated in the southeast corner of the Province, as shown in Figure 1.

limited entry hunts - hunts in which the number of hunters that are permitted to participate is restricted.

mean - the "average" or sum of the individual values for each case or response, divided by the number of cases.

median - the numerical value of the middle case, once all the cases have been ranked in order from highest to lowest.

mode - the value of the variable mentioned most often.

organized outdoor recreation group - an outdoor recreation group with a formalized membership and established objectives.

participating households - households that participated in some form of outdoor recreation in 1980.

possession limit - maximum number of each species of fish that a person may retain on a trip of several days duration, according to government regulations. The possession limit may be comprised of one or more daily limits.

pre-test	- a preliminary test of a survey which serves to evaluate sample design and question format.
quote	- maximum number of a species of wildlife that may be harvested over a specified time period.
raptors	- birds of prey e.g. eagles, hawks.
recreation conflicts	- conflicts which may occur when a single geographic area is used for two or more incompatible recreation activities at the same time.
respondents	- Coal Block, Cranbrook, and Kimberley households that responded to the study.
S.A.S.	- "Statistical Analysis System", a system of computer programmes similar to S.P.S.S., but with extended reporting capabilities and the ability to update data files. In general, it allows the user to perform lower level analyses of data than does S.P.S.S.
sample	- Coal Block, Cranbrook, and Kimberley households that were selected to participate in the study.
small game	- small fur-bearing animals and birds that are enjoyed for hunting or non-hunting use.
songbirds	- birds that utter a succession of musical tones e.g. robins, sparrows.
Southeast Coal Block	- one of the two major coal-bearing areas of the Province, situated in the Kootenay Region. The Coal Block is comprised of the Elk and Flathead River drainages, and is represented by Zones 1 through 5 in Figure 2.
S.P.S.S.	- "Statistical Package for the Social Sciences", an integrated system of computer programmes commonly used in the statistical analysis of social science data.
study populations	- populations of the Coal Block communities of Elkford, Sparwood, Elko, and Fernie and of the neighbouring communities of Cranbrook and Kimberley.
success rate	- the amount of time required to harvest a fish or an animal.

trench population - refers to the study population consisting of Cranbrook and Kimberley households.

trophy hunting - hunting for large, mature males of the species. The head or hide of the animal is often used for decorative purposes.

upland game birds - game birds that occupy fields and uplands e.g. pheasant, grouse.

viewers - people in the households surveyed who enjoy the non-hunting use of wildlife, including photographing, viewing or watching, studying nature, drawing or painting, or some other activity related to the non-hunting use of wildlife.

viewing days - number of days spent participating in the non-hunting use of wildlife by the study populations.

waterfowl - aquatic game birds e.g. ducks, geese.

wildlife - mammals and birds enjoyed for hunting and non-hunting use.

Appendix C: Survey Methodology

C.1 Study Design

Early in the development of the study, it was determined that a household survey would be conducted. This choice was consistent with an earlier Parks and Outdoor Recreation Division decision to implement a Provincial household survey.

C.2 Sample Design

Three survey methods were considered for this study: a telephone survey only, a mail survey, and a combination of the two. The first option would have been the least costly to implement and would have provided activity day estimates for each of the twenty-two outdoor recreation activities for which data was required. However, site specific information concerning participation and residents' perceptions of present and future resource management practices would have been difficult to obtain by telephone. On the other hand, it was not feasible to administer a mail survey alone in the Coal Block, because mail is not home-delivered in that area and a current list of mailing addresses was not available.

It was therefore decided to conduct a telephone survey followed by a mail survey in the Coal Block communities. This option facilitated: (1) obtaining residents' mailing addresses; (2) determining which of the four mail questionnaires to send to those residents; (3) obtaining information on the location of outdoor recreation activities; (4) assessing residents' attitudes towards resource management in the Kootenay Region; and (5) testing the use of a video display terminal for recording responses to the telephone questionnaire.

While it was originally intended to only survey Southeast Coal Block residents, it was later felt desirable to determine the degree to which residents from adjacent areas recreate in the Coal

Block. Since the telephone questionnaire was to be pre-tested to reveal possible problems with question wording or interviewing techniques, it was decided that this would be a suitable means for determining if a significant proportion of households from the neighbouring communities of Cranbrook and Kimberley recreated in the Southeast Coal Block.

Sixty households were selected to be pre-tested, half from the Coal Block and half from Cranbrook and Kimberley. Forty-one completed interviews were obtained. Since eleven of the fourteen Cranbrook/Kimberley households that recreated in the past year had done so at least once in the Southeast Coal Block, it was decided to include households from these two towns in the survey. Cost prohibited surveying all the Cranbrook and Kimberley households by both telephone and mail. Therefore, they participated in the mail survey only.

The data produced by this study were obtained from a stratified sample of households in the Southeast Coal Block and Cranbrook and Kimberley. The telephone survey sample for the Coal Block was selected from the September 1980 telephone directories for Elkford, Elko, Fernie and Sparwood. The sampling procedure was systematic: a table of random numbers was used to select the initial residence in each community and subsequently every fifth residence in the directory was chosen. In this way, 20% of area households were selected as potential contacts. Since the minimum number of completed questionnaires desired was 10% of area residents, it was believed that 20% was necessary to allow for a 60% response rate and for pre-testing the questionnaire design and survey techniques used in both the telephone and mail surveys. As a result, 848 households were selected as possible contacts.

The same sampling procedure was used for the mail survey of Cranbrook and Kimberley, resulting in 1195 households being selected to participate in the survey. Addresses of those selected were obtained from the telephone directory.

C.3 Questionnaire Design

C.3.1 Objectives

The primary objective of both the telephone and mail surveys was to quantify current participation in outdoor recreation within and immediately adjacent to the Southeast Coal Block, by residents of the Coal Block communities, and Cranbrook and Kimberley. Comparison of the participation patterns of long-term Coal Block residents with those of recent arrivals employed in the coal-mining industry was another objective of the telephone survey. As the rapid expansion of coal mining in the region will likely result in an influx of new residents to the area, knowledge of their recreational preferences is important to those planning for the provision of recreational opportunities. Additional objectives of the mail survey were to determine the locations of recreational activities and to assess residents' attitudes towards present and future resource management practices in the Kootenay Region.

C.3.2 Telephone Questionnaire

To reveal possible problems with question wording or interviewing methods, a pre-test of the telephone questionnaire was conducted. Two formats were pre-tested. The first simply asked whether or not any members of the respondents' household had participated in each of the twenty-two activities, while the second, which was selected, asked the information necessary to calculate the number of activity days spent by each household. Once it was determined that members of the household had participated in a particular activity, the respondent was asked the number of days in the past year that members of his/her household participated, and the number of people in his/her household who usually participated. It is important to note that respondents were not asked where they took part in these activities; therefore, it cannot be assumed that all respondents recreated within the Southeast Coal Block.

This series of questions concerning recreation activities was followed by three questions which solicited information about the characteristics of the household: (1) type of employment; (2) employment in the coal-mining industry; and (3) years of residency in the East Kootenay Region. The first question was included so that the representativeness of the sample could be checked against census data. The latter two questions were asked so that the participation patterns of long-time residents of the East Kootenay Region could be compared to those of newcomers to the area employed in the coal-mining industry.

A copy of the abbreviated form of the telephone questionnaire which appeared on the screen of the video display terminal is provided in Appendix A.

C.3.3 Mail Questionnaires

The mail survey was comprised of four questionnaires. The first contained questions on participation in the twenty-two activities that had been addressed in the telephone survey, the second was concerned solely with fishing, the third with hunting, and the fourth with the non-hunting use of wildlife. As a result of a pre-test of these questionnaires, several changes in question wording and formatting were made to improve clarity. A combination of closed and open-ended questions was used; the respondent was required to either rank a number of options, select a response from a list, or provide his/her own responses. A map of the Kootenay Region, divided into eight management zones, was included with the questionnaires, and the respondent was required to refer to this when answering some of the questions. This zonation was intended to allow the quantification of activity days in specific geographic areas within the Kootenay Region. Copies of the questionnaires and the map are included in Appendix A.

C.4 Survey Techniques

C.4.1 Telephone Survey

Telephone interviews were conducted between October 16 and December 17, 1980, during both the day and evening. All calls were placed from Victoria. The interviewer identified herself as an employee of the Parks and Outdoor Recreation Division, explained the purpose of the survey, and described how respondents had been selected to participate in the survey.

All responses were entered directly into a computer data file by means of a video display terminal. Instructions to the interviewer as well as the questionnaire itself were displayed on the screen of the video display unit (Appendix A). As the interviewer read each question and typed and "entered" the reply, the next applicable question appeared on the screen. For example, if the response to the first question, "Did any members of your household go camping in the past year?" was "No", questions concerning camping locations and number of nights spent camping were automatically skipped, and a question concerning boating activities appeared on the screen. Manual coding sheets were used when the computer was not functioning.

A "contact record sheet" was completed for each household in the sample. These sheets were prepared in advance, and displayed the household's identification number, telephone number, and name. The date, time, and result of each call placed to the household were recorded as calls were made, and the respondent's mailing address and the appropriate mail questionnaires to be sent were noted once an interview was completed.

Four attempts to contact possible respondents were made, two during the day and two in the evening over a period of at least three days. Households were dropped from the sample if (a) four unsuccessful contact attempts had been made, (b) their telephone number was not in service and B. C. Tel Directory Assistance could not supply a new listing, or (c) the respondent refused to participate in the survey.

A total of 885 calls were made during the two month period. The table below shows that the average length of telephone calls was approximately 5 minutes, and the average cost was about $3.00.

Table 85
Number of Calls by Time of Day, Average Length, and Cost

Number of day calls	487	(55%)
Number of evening calls	398	(45%)
Total calls	885	
Average length of call (in minutes)	4.86	
Average cost of calls (toll charges)	$3.03	

C.4.2 Mail Survey

The mail survey was conducted between December 8, 1980 and March 31, 1981. The first mailing of the questionnaires took place between December 8 and December 19, 1980. Since Coal Block households had previously been asked about their participation in outdoor recreation activities in the telephone survey, they were sent only the applicable mail questionnaires. Cranbrook and Kimberley households selected to participate in the mail survey were mailed all four questionnaires. A follow-up post card reminding respondents to return their questionnaires was sent to all participants one week after the first mailing. On January 28, 1981, all participants who had not yet responded to the questionnaires were sent second copies with a letter urging them to respond. The cut-off date for the mail survey was March 31, 1981.

Because the first mailing was conducted close to Christmas, the second mailing was felt to be necessary in order to promote a higher response rate. Since the second mailing occurred at the end of January and questionnaires were still being returned until the end of March, it is apparent that the second mailing did encourage a greater response.

Volunteer contact persons from each of the four Coal Block communities, Cranbrook, and Kimberley were available to provide information on and answer questions about the mail survey. These people also assisted during the pre-test.

C.5 Survey Response

The original sample size for the telephone survey was 848 households. From this, 669 completed interviews were obtained. The following table summarizes the allocation of the sample and the responses among each of the four communities. Of the 780 possible calls (i.e. those numbers which were in service), 85.8% or 669 resulted in successful contacts, of which 84.6% were completed interviews with households that had participated in recreation activities in the past year and 15.4% were with households that had not. Approximately 15% of the households in the Southeast Coal Block communities were successfully contacted.

Table 86
Response to Telephone Survey by Southeast Coal Block Households

	Elkford	Elko	Fernie	Sparwood	Total
Households[1]	1142	206	1603	1618	4569
Sample Size	158	33	402	255	848
Sample Size as % of Population	13.8%	16.0%	25.1%	15.8%	18.6%
Not in Service	13	2	38	15	68
Possible Calls	145	31	364	240	780
Refusals[2]	15	1	23	16	55
Non-responses[3]	14	5	22	15	56
Completed Calls[4]	116	25	319	209	669
Participants[5]	110	23	249	184	566
Completed Calls as % of Sample Size	73.4%	75.8%	79.4%	82.0%	79.0%
Completed Calls as % of Possible Calls	80.0%	80.6%	87.6%	87.1%	85.8%
Completed Calls as % of Households	10.2%	12.1%	19.9%	12.9%	14.6%

[1] Population figures obtained from Ministry of Municipal Affairs population estimates, September 1980. These were not available at the time the sample was selected.

[2] "Refusals" includes those who declined to participate in the survey but did not state a reason for doing so, those who refused due to their inability to speak English, and those who had been previously pretested.

[3] "Non-responses" refers to those households that could not be contacted, i.e. after four attempts there was either no answer or a busy signal, or it was not a convenient time for the respondent.

[4] "Completed calls" includes 566 households that had participated in at least one type of outdoor recreation activity plus 103 households that had not participated in any type of outdoor recreation.

[5] "Participants" refers to those households that had participated in at least one type of outdoor recreation activity.

As stated previously, those households contacted in the telephone survey that indicated they had participated in outdoor recreation formed the sample for the mail survey in the Coal Block communities. Table 87 shows that 57.8% of the possible respondents (the sample size less the questionnaires which were undeliverable), or 332 households out of a total sample of 574, returned completed questionnaires.

Table 87
Response to Mail Survey by Southeast Coal Block Households

	Elkford	Elko	Fernie	Sparwood	Total
Households[1]	1142	206	1603	1618	4569
Sample Size[2]	113	23	261	184	581
Sample Size as % of Population	9.9%	11.2%	16.3%	11.4%	12.7%
Undeliverable[3]	0	0	7	0	7
Possible respondents	113	23	254	184	574
Non-responses	58	11	101	72	242
Returns[4]	55	12	153	112	332
Returns as % of Sample Size	48.7%	52.2%	58.6%	60.9%	57.1%
Returns as % of Possible Respondents	48.7%	52.2%	60.2%	60.9%	57.8%
Returns as % of Households	4.8%	5.8%	9.5%	6.9%	7.3%

1 Population figures obtained from Ministry of Municipal Affairs population estimates, September 1980.

2 "Sample Size" refers to the number of households which were sent a questionnaire. This number was determined by the number of households that indicated in the telephone survey that they had participated in outdoor recreation activities. However, there were 15 more mail questionnaires sent than there are records of completed interviews. It must be assumed, therefore, that these 15 households were participants, but the records of their interviews were accidentally deleted from the telephone survey data file.

3 "Undeliverable" refers to those questionnaires which were returned marked "unclaimed", "no such address", "moved", or "deceased".

4 "Returns" refers to the number of "Outdoor Recreation Participation" questionnaires returned.

C10 In Cranbrook and Kimberley, 38.9% of the possible respondents to the mail questionnaire, or 455 households out of 1,169, returned completed questionnaires (Table 88). The response rate appears to be much lower in these communities than it was in the Coal Block. It should be kept in mind that the number of "non-respondents" in Cranbrook and Kimberley includes those who refused to answer the questionnaire and those who did not participate in outdoor recreation activities during 1980. However, "non-respondents" in the Coal Block communities only refers to those who indicated in the telephone survey that they had participated in outdoor recreation activities, but refused to answer the mail questionnaire. Telephone contact prior to receiving the questionnaire by mail may have served to increase the response rate in the Coal Block communities. Coal Block residents may also have had more of a direct interest in the study than Cranbrook and Kimberley residents, since the focus of the study was the Southeast Coal Block.

Table 88
Response to Mail Survey by Cranbrook and Kimberley Households

	Cranbrook	Kimberley	Total
Households[1]	5095	2288	7383
Sample Size[2]	612	583	1195
Sample Size as % of Population	12.0%	25.5%	16.2%
Undeliverable[3]	11	15	26
Possible respondents	601	568	1169
Non-responses[4]	338	376	714
Returns	263	192	455
Returns as % of Sample Size	43.0%	32.9%	38.1%
Returns as % of Possible Respondents	43.8%	33.8%	38.9%
Returns as % of Households	5.2%	8.4%	6.2%

1 Population figures obtained from Central Statistics Bureau, Ministry of Industry and Small Business Development (June 1980 population estimates).
2 "Sample Size" refers to the number of households that were sent a questionnaire.
3 "Undeliverable" refers to those questionnaires which were returned marked "unclaimed", "no such address", "moved", or "deceased".
4 "Non-responses" refers to those households which either refused to answer the questionnaire or did not participate in outdoor recreation activities during 1980.

Table 89 compares the response rates from each community to each of the four mail questionnaires. Understandably, the outdoor recreation participation questionnaire had the highest rate of response in both the Coal Block and Trench communities. The fishing questionnaire had the second highest response, followed by the non-hunting use of wildlife and the hunting questionnaires, respectively.

Table 89
Response to Mail Survey by Type of Questionnaire

Questionnaire		Elkford	Elko	Fernie	Sparwood	Total Coal Block	Cranbrook	Kimberley	Total Trench
Outdoor Recreation	sent	113	23	254	184	574	601	568	1169
	ret'd	55	12	153	112	332	263	192	455
	%	48.7	52.2	60.2	60.9	57.8	43.8	33.8	38.9
Fishing	sent	84	21	179	129	413	601	568	1169
	ret'd	40	8	105	75	228	197	157	354
	%	47.6	38.1	58.7	58.1	55.2	32.8	27.6	30.3
Hunting	sent	56	18	108	92	274	601	568	1169
	ret'd	22	8	53	56	139	125	91	216
	%	39.3	44.4	49.1	60.9	50.7	20.8	16.0	18.5
Non-Hunting Use of Wildlife	sent	62	17	121	98	298	601	568	1169
	ret'd	25	8	70	50	153	163	147	310
	%	40.3	47.1	57.9	51.0	51.3	27.1	25.9	26.5

C.6 Data Preparation

C.6.1 Telephone Survey Data

As stated previously, responses to the telephone questionnaire were entered directly into a computer data file through the use of a video display terminal. Errors made when recording these responses could not generally be corrected at the time because the associated delay would have broken the continuity of the interview. In addition, several types of errors were made which could not be detected until after preliminary data analysis had occurred.

In both cases, errors in the data were corrected at a later date by visually reviewing and editing the file at a video display terminal using WYLBUR, a computer program by On-Line Data Systems. Errors which the interviewer had noted during the interview were corrected first, then those parts of the data file which initial data analysis showed to be suspect were examined and, when necessary, edited. Errors of the latter type had usually resulted from one of the following situations:

(a) computer-assisted questionnaire data entry was terminated for some reason and the data was recorded manually on a questionnaire sheet. When this data was later entered into the data file, columns were misaligned or variables were omitted, as the operator did not have the benefit of using the data entry procedures.

(b) the interviewer attempted to use the incorrect editing keys on the computer terminal to correct an immediate error, or entered an alphabetic character instead of a numeric one. These errors generally required visual verification of the data to identify and correct.

C.6.2 Mail Survey Data

While the mail survey questionnaires were partially pre-coded, some manual coding was necessary before they were key punched to computer tape. There were nineteen "open" questions in the four questionnaires for which the respondent either was required to compose his/her own answers or provide an explanation for choosing "other" as a response. To develop a set of codes for these questions, responses from the first fifty questionnaires returned were recorded, and the eight most common answers were selected and assigned a code number. These coding lists were then compiled with general coding instructions for each type of questionnaire and a coding manual was prepared.

Questionnaires were edited for consistency between questions. For example, if a respondent indicated in Question 6 on the fishing questionnaire that members of his/her household had fished in Zone 3, but had not indicated in Question 5 the number of days that had been spent fishing in Zones 1-5, Question 5 was coded to show that the respondent had fished in one or more or those zones, even though the number of days spent fishing was not available.

Answers to some questions were discarded (ie. a note was written to indicate to the keypuncher to disregard the question), if they had been answered incorrectly. For instance, if the respondent had circled two responses when he/she had been instructed to only circle one, the answer was regarded as invalid.

Once questionnaires had been edited and coded, they were batched and sent to the British Columbia Systems Corporation (BCSC) to be keypunched directly to temporary computer tapes. They were accompanied by keypunching instructions which had been prepared and discussed with BCSC Data Entry staff before questionnaires were submitted. Subsequent batches of the questionnaires were added to the tapes as they were keypunched.

All keypunching was verified, i.e. the data was repunched on a verifier which marks every column where the character punched is different from the character on the tape. Once all keypunching was completed, and corrected, the temporary tapes were transferred to a disc file. Sorted data files for each questionnaire type were created. These files were then scanned visually to detect obvious keypunching errors, such as nonexistent questionnaire numbers.

Most errors were not detected until after preliminary data analysis had begun. "Wild" codes, for example, "30" instead of "3", and other suspected coding and keypunching errors became immediately apparent. These errors were corrected at a video display terminal in the same way as were those in the telephone survey data file.

C.7 Data Processing and Analysis

S.P.S.S., a "packaged" computer program, was used to generate simple frequency distributions for each question, providing response percentages, descriptive statistics, and cross-tabulations between variables. Some additional analyses required manual calculations.

Two steps were required to determine the total number of days spent at each recreational activity by the populations of the Coal Block communities and of Cranbrook and Kimberley. First, the average number of days spent at each activity by the survey populations was calculated, then these figures were projected to the total population of these communities using the following method. The average number of days spent by the surveyed households that participated in a particular activity was found by first summing the total number of activity days spent by each household (number of participants in the household times number of household days spent), and then dividing this figure by the number of participating households.

The value for mean activity days per household was then multiplied by the estimated number of households in the population that had participated in that activity to generate the number of days spent at that activity by the total population.

The following example illustrates the method by which the estimated number of activity days for camping by the Coal Block population was determined from the results of the telephone survey:

percentage of survey population that camped	(58.0%)
x number of households in the population	(4,569)
= estimated number of households in the population that camped	(2650)
mean activity days per household for those households that camped x estimated number of households in the population that camped	(55.48) (2650)
= estimated activity days for camping by the Coal Block population	147,022

The estimated number of activity days spent fishing, hunting and enjoying the non-hunting use of wildlife, as derived from the results of the mail survey, were calculated similarly. The estimated number of angling days and hunting days for the two populations were calculated by multiplying the mean number of angling or hunting days per household by the estimated number of households that participated in fishing or hunting. The estimated number of activity days for the non-hunting uses of wildlife in each population was calculated in the following manner. The mean number of activity days spent in each of four types of non-hunting activities (from Question 3) by those households that had made a special effort to participate in those activities (as indicated in Question 5) was multiplied by the estimated number of households in the population that had made a special effort to participate in each of the non-hunting uses of wildlife.

C.8 Limitations to Interpreting Data

The results of any survey are subject to several kinds of errors, one of which is called the sampling error. Data from a sample vary somewhat from the population value due to random variations arising from only interviewing a fraction of the population. If different samples were used under the same survey conditions, some of the estimates would be larger than the population value and some would be smaller. The difference between the sample estimate and the corresponding value for the population (which can only be obtained if the entire population is interviewed) is measurable, and is known as the sampling error. The magnitude of the error is influenced by the size of the sample and the variance of a particular estimate.

Two estimates were obtained from telephone survey data:

(1) the proportion of households that participated in selected outdoor recreation activities; and

(2) the number of activity days spent in those activities.

Tables 90 and 91 indicate the reliability (ie. sampling error) for these estimates for three confidence levels (80%, 90% and 95%)*. In practice, the 95% confidence level is most frequently used. For example, according to the telephone sample, 58% of the Coal Block households camped in 1980 (Table 90). Table 90 also indicates that we can be 95% confident that the true value for the Coal Block population as a whole is 58±5%, or between 53% and 63%. Similarly, Table 91 indicates that according to the survey sample, Coal Block residents spent an estimated 147,012 days

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*Confidence level refers to the concept that if the same sampling plan or survey were repeated, chances are that 95 times out of a 100, the research finding from the survey would be plus or minus a given number of percentage points. The ±% represents the sampling error, and 95 out of 100 represents the confidence we have in the estimate (research finding from the survey).

Table 90
Confidence Levels for 1980 Participation Rates, Southeast Coal Block Households

Activity	No. of Households Participated	% of Households that Participated	Sampling Errors at Three Confidence Levels*		
			80%	90%	95%
Fishing	407	61%±	3	4	5
Beach Visits	393	59%±	3	4	5
Camping	388	58%±	3	4	5
Viewing**	298	45%±	4	5	6
Tobogganing	290	43%±	4	5	6
Hunting**	274	41%±	4	5	6
Downhill Skiing	263	39%±	4	5	6
Four-wheel Driving	224	34%±	4	5	6
Day Hiking	221	33%±	4	5	6
Power-boating	163	24%±	4	5	7
Snowmobiling	141	21%±	4	6	7
Ice Fishing	135	20%±	4	6	7
Canoeing	103	15%±	5	6	7
Cross-country Skiing	102	15%±	5	6	7
Snowshoeing	100	15%±	5	6	7
Trailbiking	92	14%±	5	6	7
Horseback Riding	85	13%±	5	6	7
Overnight Hiking	71	11%±	5	6	7
Waterskiing	56	8%±	5	6	7
Mountain Climbing	51	8%±	5	6	7
Winter Camping	38	6%±	5	6	7
Sailing	8	1%±	5	6	9
Ski Touring	4	<1%±	6	9	12
Kayaking	3	<1%±	7	11	17

*Accuracy of estimates or standard errors are based on calculations that assume a simple random sample of households.
**Participation rates for hunting and viewing were determined from the number of hunting and non-hunting use of wildlife mail questionnaires sent.

Table 91
Confidence Levels for Estimated 1980 Activity Days, Southeast Coal Block Residents

Activity	Number of Households that Participated	Estimated Number of Activity Days**	Sampling Errors at Three Confidence Levels		
			80%	90%	95%
Camping	388	147,012	8% (11,509)	10% (14,768)	12% (17,596)
Fishing	407	116,706	10% (11,897)	13% (15,265)	16% (18,188)
Tobogganing	290	111,927	11% (12,498)	14% (16,036)	17% (14,107)
Beach Visits	393	109,126	8% (8,981)	11% (11,524)	13% (13,731)
Four-wheel Driving	224	103,634	14% (14,542)	18% (18,660)	21% (22,233)
Downhill Skiing	263	76,714	11% (8,712)	15% (11,179)	17% (13,320)
Day Hiking	221	38,425	19% (7,124)	24% (9,141)	28% (10,891)
Trailbiking	92	36,346	23% (8,327)	29% (10,695)	35% (12,731)
Snowmobiling	141	36,867	19% (7,175)	25% (9,207)	30% (10,970)
Power-boating	163	34,852	16% (5,443)	20% (6,984)	24% (8,321)
Horseback Riding	85	30,937	71% (22,020)	91% (28,254)	109% (33,665)
Cross-country Skiing	102	22,406	19% (4,252)	24% (5,456)	29% (6,501)
Canoeing	103	20,003	23% (4,612)	30% (5,919)	35% (7,052)
Ice Fishing	135	13,844	15% (2,113)	20% (2,711)	23% (3,230)
Snowshoeing	100	10,367	23% (2,358)	29% (3,026)	35% (3,605)
Winter Camping	38	6,849	39% (2,655)	50% (3,407)	59% (4,059)
Overnight Hiking	71	2,984	27% (794)	34% (1,019)	41% (1,214)
Mountain Climbing	51	2,234	28% (620)	36% (796)	42% (944)
Sailing	8	1,183	61% (727)	82% (974)	103% (1,216)
Kayaking	3	786	119% (938)	185% (1,452)	272% (2,140)
Ski Touring	4	480	84% (401)	120% (576)	162% (778)

**There is a slight discrepancy between the activity day estimates provided in this table and those presented in the main body of the report. This is a result of (a) rounding and (2) the fact that, for some of the activities, the sample from which the estimates were made was less than 669, as one or more households could not provide an estimate of the number of days they had spent.

camping in 1980. We can be 95% confident that the true value for the population will be 147,012 days ± 12%. In other words, it is estimated that Coal Block residents spent between 129,416 and 164,608 days camping in 1980.

Both telephone and mail survey data were used to estimate the numbers of days the survey populations (Coal Block and Cranbrook/Kimberley) spent fishing, hunting, and viewing wildlife in different geographic locations. Estimated activity days from the mail survey were calculated in the following manner:

(a) The number of households that participated in each activity was derived from the telephone survey. For example, of the 669 Coal Block households contacted by telephone, 274 (40.96%) indicated that they hunted and were sent a questionnaire. This proportion was applied to the total number of Coal Block households (4569) to estimate the number that hunted (1871). Participation rates for Cranbrook and Kimberley households could not be determined, as they were not surveyed by telephone and non-responses to the mail survey included both households that refused to answer the questionnaire and those that did not participate in outdoor recreation activities during 1980. It was therefore assumed that the same proportion of Cranbrook and Kimberley households participated in each activity as did in the Coal Block.

(b) The mean number of days spent at each activity was based on a sub-sample of participating households, that is, the number that returned completed questionnaires. For hunting, for example, the sub-sample for mean activity days in the Coal Block was the 139 households out of 274 that returned a hunting questionnaire.

Tables 92 to 94 indicate the sampling errors for angling, hunting and viewing day estimates at the 95% confidence level, for both the Coal Block and Cranbrook/Kimberley.

Table 92
Confidence Level for 1980 Angling Day Estimates

I Coal Block

Angling Location and/or Type	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Inside B.C.	164,959	± 12,395 (8%)
Outside B.C.	11,542	± 3,288 (28%)
Lake Fishing, Kootenay Region	50,350	± 7,087 (14%)
Stream Fishing, Kootenay Region	106,114	± 11,348 (11%)
Zones 1 to 5	108,710	± 11,519 (11%)
Zones 6 to 8	41,064	± 5,888 (14%)

II Cranbrook/Kimberley

Angling Location and/or Type	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Inside B.C.	228,334	± 11,656 (5%)
Outside B.C.	7,629	± 1,963 (26%)
Lake Fishing, Kootenay Region	142,068	± 9,600 (7%)
Stream Fishing, Kootenay Region	81,211	± 7,009 (9%)
Zones 1 to 5	38,231	± 7,368 (19%)
Zones 6 to 8	166,798	± 10,345 (6%)

Table 98

Confidence Level for 1980 Hunting Day Estimates

I Coal Block

Location	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Inside B.C.	70,682	± 8,410 (8%)
Outside B.C.	1,062	± 351 (33%)

II Cranbrook/Kimberley

Location	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Inside B.C.	83,245	± 6,127 (7%)
Outside B.C.	2,478	± 774 (31%)

Table 94
Confidence Level for 1980 Activity Day Estimates,
Non-Hunting Uses of Wildlife

I Coal Block

Activity	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Viewing/Watching	178,481	± 22,607 (13%)
Photographing	54,167	± 12,242 (23%)
Drawing/Painting	8,965	± 8,944 (100%)
Studying Nature	26,130	± 14,851 (56%)

II Cranbrook/Kimberley

Activity	Estimated Number of Days	Sampling Error at the 95% Confidence Level
Viewing/Watching	170,173	± 18,990 (11%)
Photographing	62,067	± 7,332 (12%)
Drawing/Painting	1,711	± 1,034 (60%)
Studying Nature	23,341	± 6,360 (27%)

Appendix D: Study Costs

Survey Component	Cost	Person Days
Study Design	$4,333	60
Telephone Survey		
Toll Charges	$2,685	N/A
Staff	$5,429	73
Computer	$ 500	N/A
	$8,614	73
Mail Survey		
Printing	$2,800	N/A
Staff	$30,408	356
Travel	$ 1,786	N/A
Computer	$ 2,777	N/A
	$37,771	356
Total Study Costs	$50,718	489

Cost Per Contact

Telephone Survey $8,614 ÷ 669 contacts* = $12.88 per contact

Mail Survey $37,771 ÷ 787 contacts+ = $47.99 per contact

*Contacts are defined as the number of completed calls, excluding refusals.

+Contacts are defined as the number of "Outdoor Recreation Participation" questionnaires returned. Of the four mail questionnaires, the number returned was 2,187. Therefore, the cost per contact for each completed questionnaire was $37,771 ÷ 2,187 = $17.27.

Appendix E: Critique of Survey Methods and Recommendations for Future Participation Surveys

This study was viewed as a "pilot" for future surveys of outdoor recreation participation in other regions of the province. Since it was the first study of its kind in B.C., many of the procedures followed and questions asked had not been previously tested. Consequently, it is possible that the most effective means to obtain the desired information were not always used. So that others planning future participation surveys can avoid some of the problems encountered in this study, a list of possible sources of error and the factors which may have affected the survey results, as perceived by the authors, are presented in the following pages.

E.1 Study Design

The main problem that was encountered as a result of conducting a household survey was determining the number of activity days spent in outdoor recreation by the study populations. Where possible household days were converted to activity days, using the method described in Appendix C.7.

Respondents were asked to indicate the number of days members of his/her household had participated in an activity (household days). While it was assumed that all answers given were in household days, it is possible that some respondents answered in terms of activity days. For example, if a household with four members went downhill skiing for a week's holiday, and all four household members skied each of the seven days, they spent 7 household days, or 28 activity days, skiing. Some respondents may have given 28 days answer to the question "How many days did the members of your household go downhill skiing in the past year?", rather than 7 days.

In addition, as discussed below, the questions from which household days were derived were not consistently worded (either in the two surveys or in the four mail questionnaires).

- in the telephone survey, respondents were asked how many times members of their household had participated in an outdoor recreation activity in 1980 (no particular geographic location), as well as how many members usually participated in each. The number of activity days spent by the Coal Block population in each of 22 activities could thus be derived.

- in the mail survey, the mean number of participants per household for each of the 22 activities was not determined, thus only household days were obtained. In addition, household days in the Kootenay Region were only available for the activities that were ranked as one of the five most important to the respondents.

- from the fishing questionnaire, the number of angling days inside and outside B.C., as well as in the Kootenay Region, were derived.

- the hunting questionnaire provided the number of hunting days inside and outside B.C., but not the number of hunting days within the Kootenay Region.

- the number of activity days spent in several non-hunting uses of wildlife were determined from the non-hunting questionnaire; no geographic area was specified. The number of activity days were based only on the respondents who made a special effort to view, draw and/or photograph wildlife.

E.2 Sample Design

1. While telephone directories are generally regarded as providing a fairly accurate listing of households in B.C., they do not include recent arrivals, transients, or unlisted phone numbers. In the coal-mining communities, where the migration rate is high, telephone directories may not have provided an accurate listing of current residents.

2. At the time the sample was selected, 1980 population estimates were not available. Therefore, there was no means of identifying the sample sizes which were necessary to ensure that the same percentage of households in each community was surveyed. When current population statistics were obtained later in the study, it was determined that the proportion of households surveyed did vary between communities (e.g. 25% of the households from Fernie were sampled, compared to 16% of the households in Elko).

E.3 Questionnaire Design

A critique of the two surveys and of each mail survey questionnaire has been undertaken to assess whether the survey questions were easily understood by the respondents, could be readily analysed, and produced answers that could be utilized by regional staff for resource management purposes. In a number of cases, suggestions have been made for changes in question design and/or format. These are suggestions only; it is acknowledged that questions for any future surveys would be designed to meet the planning objectives for the applicable geographic area.

E.3.1 Telephone Survey

1. It would have been interesting to determine why the non-participating households had not pursued recreational activities in the past year, e.g. not interested, physical or financial reasons, time constraints etc.

2. Activities were not clearly defined and may have been interpreted differently by the respondents.

e.g.- "Trailriding" was meant to refer to horseback riding on trails, but may have been confused with "trailbiking".

- "four-wheel driving" was meant to refer to recreational or off-road four-wheel driving, but it is suspected that some respondents' answers reflected everyday use of their four-wheel drive vehicle.

- both "winter camping" and "ice-fishing" were asked near the end of the list of activities. The respondent may already have reported the number of days he/she spent in these activities when asked earlier about his/her "camping" and "fishing" activities.

3. "Hunting or viewing wildlife" was regarded as a single activity, therefore, comparisons of the number of activity days spent in each with the results of the hunting and non-hunting use of wildlife mail questionnaires could not be made.

4. Additional or alternate types of recreational equipment could have been addressed in Question 6, e.g. campers, tents, backpacks etc.

5. The categories into which occupation types were coded were different from those used in the 1976 census, therefore, this factor could not be used to check the representativeness of the sample.

E.3.2 Mail Survey

Comments concerning specific aspects of questionnaire design that pertain to all four mail questionnaires are first discussed, then each questionnaire is treated in a separate section. These sections list each question as it appeared in a questionnaire, followed by a table which indicates the percentage of survey respondents who completed the questionnaire, but either did not answer the question or answered it incorrectly. This table is followed by statements regarding the question contents or format, or suggestions for future questionnaire design. These suggestions include comments received from resource managers in the Kootenay Region. The questions addressed are only those for which the authors or managers perceived problems.

GENERAL COMMENTS

1. The open-ended questions were generally poorly responded to and had to be coded manually. In some cases, it may have been better to provide the respondent with a list of options rather than use the open-ended format.

2. The questions which required the respondent to rank a number of options did not provide the information required to meet the objective of those questions, which was to determine which species or management options were first, second or third most important to survey respondents. A different format may have provided this information.

OUTDOOR RECREATION QUESTIONNAIRE

1. Please read the list of activities below and a) circle the letter opposite each activity in which members of your household have participated, b) rank the five activities most important to members of your household (1 = most important), and c) indicate the number of days in the past year members of your household participated in each of the activities you ranked 1 to 5.

ACTIVITY	a. Activities participated in (please circle)	b. Most important activities Rank 1-5	c. Number of days in past year
Camping	A	____	____
Canoeing	B	____	____
Kayaking	C	____	____
Sailing	D	____	____
Power Boating	E	____	____
Beach Visits	F	____	____
Day Hiking	G	____	____
Overnight Hiking	H	____	____
Mountain Climbing	I	____	____
Fishing	J	____	____
Hunting	K	____	____
Viewing Wildlife	L	____	____
Trailriding (Horseback)	M	____	____
Trailbiking	N	____	____
Off-Road 4-Wheel Driving	O	____	____
Downhill Skiing	P	____	____
Cross-Country Skiing	Q	____	____
Ski-Touring	R	____	____
Snowmobiling	S	____	____
Snowshoeing	T	____	____
Winter Camping	U	____	____
Tobogganing	V	____	____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
(a)	2%	0%
(b)	2%	4%
(c)	6%	10%
Sample size	n=332	n=455

One of the objectives of Question 1 was to compare the responses to the telephone and mail surveys with regard to the five most popular outdoor recreation activities, both in terms of the percentage of households that participated and the number of activity days spent in each. Comparisons of the mail survey and telephone survey responses could not be made because:

(a) respondents were asked to indicate the activities in which members of their household had participated, but the phrase "in the past year" was not included in this part of the question, as it was in the telephone questionnaire;

(b) in the telephone survey, respondents were asked to indicate the number of days in the past year members of their household participated in each of 22 outdoor recreation activities. In Question 1 of the mail survey, however, respondents were asked only to indicate the number of days in the past year members of their household participated in each of the five activities they had ranked as being one of the five most important to them. Comparison of the number of days spent in each activity with those determined from the telephone survey was therefore impossible, since not all of the households that participated in an activity also ranked it in the top five; and

(c) a comparison of activity days between the two surveys could not be made, as the mean number of participants per household for each activity was not determined in the mail survey.

You will need to refer to Maps 1 and 2 to answer Question 2.

2. For each of the activities ranked 1 to 5 in Question 1, please indicate the number of days you participated in each activity in the Kootenay Region (Zones 1-7 plus Zone 8) and in each of the eight zones. Please also indicate the names of sites you visited most often.

Activity Ranked	Total Days in Kootenay Reg.	No. Days in each Zone 1	2	3	4	5	6	7	8	Sites visited most often
1	(39-40)	41							56	
2	(60-61)	62							77	
3	(7-8)	9							24	
4	(28-29)	30							45	
5	(49-50)	51							66	

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
Days in Region	25%	32%
Sites visited most	41%	43%
Sample Size	n=332	n=455

The purpose of Question 2 was to determine how many days residents spent participating in several outdoor recreation activities in specific geographic areas within the Kootenay Region. However, respondents were asked only to indicate the number of days in the past year members of their household had participated in the Kootenay Region in each of the activities they ranked in Question 1 as being one of the five most important to them.

Since not all of the households that participated in an activity also ranked it in the top five, neither household participation nor household days in the region could be generated for each of the twenty-two activities. In addition, possibly due to the complexity of the question format, not all households who ranked an activity in the top five and participated in that activity in the region also indicated the number of days they spent in the region or in zones within the region.

3. Please indicate the number of nights members of your household camped in the Kootenay Region at each of the following types of sites in the past year.

	Number of nights past year
Undeveloped sites	☐☐
Private campgrounds	☐☐
B.C. Forest Service campgrounds...	☐☐
Provincial Parks.....	☐☐

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	26%	25%
Sample size	332	455

Question 3 did not specify whether the respondents should indicate "household nights" or "person nights", although it has been assumed that all responses were in "household nights". The question format also did not allow a distinction to be made between respondents who did not go camping in 1980 and those who did not answer the question. A choice of only four types of sites was provided, yet respondents could have camped in nearby national parks, e.g. Kootenay, Yoho or Glacier National Parks.

4. Where do the members of your household camp most often?

Name of area: _____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	31%	35%
Sample Size	n=332	n=455

Question 4 assumes that all households camped, therefore no distinction could be made between refusals and non-responses. The analysis of the question may have been aided if a list of sites had been provided.

5. Do members of your household think additional campgrounds are needed or any existing sites need improvement? If yes, where?

_____

_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
more needed	88%	92%
improvement needed	67%	81%
Sample Size	n=332	n=455

The format of Question 5 made it difficult to tell whether a respondent's answer referred to "additional sites needed" or "existing sites need improvement." Also, the "improvement" of sites is subject to interpretation, e.g. some campers would perceive the provision of trailer hook-ups as improving a site, while others would not. Finally, a distinction cannot be made between the number of respondents who did not answer the question and the number who either didn't think improvements to existing sites or additional campgrounds are necessary. It is interesting to note that a very small percentage of respondents answered this question.

6. What would the members of your household do if their favourite, most frequently visited, recreation areas in the Kootenays were used more often by other people? Please circle only one response.

	Circle	
Do nothing	1	
Go elsewhere	2, where?	_____
		_____
Take up other activities	3, what?	_____
		_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	8%	17%
Sample Size	n=332	n=455

Many respondents who chose option 2 (go elsewhere) said they would go to "a less crowded area", rather than specifying a location. The provision of a site names list may have encouraged them to give more specific answers. Since it is not known in which activities the respondents presently participate at their favourite recreation sites, option 3 (take up other activities) did not provide very useful information.

Recreation conflicts may occur when a single area is used for two or more activities at the same time, for example, when waterskiers and fishermen are using the same lake or when cross-country skiers and snowmobilers are using the same trails.

7. Have you or other members of your household ever experienced recreation conflicts in the Kootenay Region? You may use the space below to describe your experiences. Please state where (Zone number) and when each conflict occurred.

_____

_____

_____

_____

_____

_____

Percentage of Respondents Who Did Not Answer

Coal Block	Cranbrook/Kimberley
70%	60%
Sample Size n=332	n=455

In some cases, due to the open-ended structure of the question, it was difficult to tell to which activity the respondent was sympathetic, for instance "hunting vs. viewing wildlife" - were hunters being harassed by viewers, or viewers being bothered by hunters? Perhaps examples of recreation conflicts that were not common to the area should have been given.

17. Do any members of your household belong to organized outdoor recreation groups? If yes, please indicate which ones.

	Circle		Circle
B.C. Wildlife Federation.....	A	Fernie & District Rod and Gun Club	K
Cranbrook District Rod and Gun Club.....	B	Four Wheel Drive Assoc. of B.C..	L
Cranbrook Field Naturalists....	C	Kimberley Wildlife Club.....	M
Elkford Rod and Gun Club.....	D	Outdoor Rec. Council of B.C.....	N
Elk Valley 4x4 Mountain Cats...	E	Silver Tip Cross-Country Ski Club	O
Elk Valley Mountaineers.....	F	Sparwood & District Fish & Wildlife Association.....	P
Elk Valley Racing Team.....	G	The Pass Muzzle Loaders.....	Q
Elk Valley Recreation Council..	H	Wardner Rod and Gun Club.....	R
Federation of B.C. Naturalists..	I		

The inclusion of the Outdoor Recreation Council of B.C. on the list was an error, as its membership consists of several outdoor recreation organizations. In addition, most Rod and Gun Club members are also members of the B.C. Wildlife Federation. An "other" category should have been provided with this question.

FISHING QUESTIONNAIRE

6. (a) Please circle the zone(s) in which the anglers of your household fish.
   (b) Next, rank the zones in which you most prefer to fish. (1 = most preferred)
   (c) For each of the zones in which you fish, please circle whether you usually stream fish or lake fish.

Zones Fished	Zones Preferred	Type of Fishing (Please circle the type you do most often)	
Circle	Rank	Stream	Lake
1 - Upper Elk.....	_____	.....1.....	or.....2
2 - Lower Elk.....	_____	.....1.....	or.....2
3 - Michel.....	_____	.....1.....	or.....2
4 - Wigwam.....	_____	.....1.....	or.....2
5 - Flathead.....	_____	.....1.....	or.....2
6 - Lower Trench....	_____	.....1.....	or.....2
7 - Bull River.....	_____	.....1.....	or.....2
8 - Rest of Region..	_____	.....1.....	or.....2

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	4%	3%
Sample size	n=214	n=320

The objective of Question 6 was to determine the amount of lake and stream fishing pressure in each zone. From 6a, the proportion of anglers who fished in each zone was determined. However, that information does not represent the proportionate fishing pressure (i.e. angling days) in each zone. Since it was assumed that the answers to 6a did represent proportionate fishing pressure, the purpose of 6b was to determine whether the anglers

preferred to fish in zones different from those in which they usually fished. From 6c, the proportion of anglers who usually stream or lake fished in each zone was determined. More accurate information on the number of stream and lake angling days in each zone may have been obtained by combining Questions 4, 5 and 6. For example:

Please indicate the number of days members of your household stream and/or lake fished in <u>each</u> zone. For example, if 2 people in your household stream fished 4 days in Zone 2, you would put '8' (2 people x 4 days) in the Zone 2 row under angling days, streams.

ZONE	ANGLING DAYS, STREAMS	ANGLING DAYS, LAKES
1		
2		
3		
4		
5		
7		
8		
Total		

7. Why do you fish in the Kootenay Region (Map 1)? _____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	31%	26%
Sample Size	n=214	n=320

The purpose of Question 7 was to determine whether anglers are fishing in the Kootenay Region for the recreational or aesthetic experience, or for the amount of meat they obtain. Almost a third of the respondents did not answer this question. Perhaps the question should have been separated into two questions: "Why do you fish?" and "Why do you fish in the Kootenay Region?", with options provided.

8. Please indicate in which month(s) the anglers of your household fish in the Kootenay Region (Map 1) for each of the following species.

	Months Fished (Please circle)													Do not Fish
Rainbow Trout	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐
Yellow-stone Cut-throat	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐
Brook Trout	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐
Dolly Varden	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐
Kokanee	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐
Mountain White-fish	J 01	F 02	M 03	A 04	M 05	J 06	J 07	A 08	S 09	O 10	N 11	D 12	OR	☐

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	19%	12%
Sample Size	n=214	n=320

The purpose of Question 8 was to determine which species are fished in the region and to determine the distribution of angling days by month, for each of those species. The information derived from the question was the proportion of households that fished for each species in each month of the year, which is not equivalent to the proportion of angling days spent in those months. For example, a household that fished one day in a month was weighted the same as a household that fished 31 days.

9. When does your household do <u>most</u> of its fishing in the Kootenay Region? Please rank your answers 1 (most common) to 3 (least common).

	Rank
On holidays.....	____
On overnight trips.....	____
On day trips.....	____

<u>Percentage of Respondents Who Did Not Answer</u>

	<u>Coal Block</u>	<u>Cranbrook/Kimberley</u>
	2%	1%
Sample Size (n=)	214	320

Since the purpose of Question 9 was to determine the <u>most common</u> type of fishing trip in the Kootenay Region, it was not necessary to have the answers ranked. The choice of one option would have been sufficient.

10. Are the anglers of your household satisfied with the catch and possession limits set out in the present fishing regulations?

	Circle
Yes.....	1
No.....	2

If you answered "No", please tell us why you are not satisfied.

_____

_____

11. How often do you, yourself, (not the anglers of your household) catch your daily limit?

	Circle
Always.....	1
Usually.....	2
Seldom.....	3
Never.....	4

Percentage of Respondents Who Did Not Answer

Question	Coal Block	Cranbrook/Kimberley
10	2%	2%
11	4%	2%
Sample Size	n=214	n=320

There is an inconsistency in the way Questions 10 and 11 were asked. Question 10 was addressed to anglers of the households surveyed and Question 11 to individual anglers within those households. It was therefore assumed that the answers from the households were synonomous with answers from individual anglers within those households.

12. If the chance of catching fish in the Kootenay Region decreased, what would the anglers of your household do? Please check only one response.

	Circle
Continue to fish in the same spots....	1
Fish in other parts of the region.....	2
Fish in another part of the province..	3
Fish in Alberta or the U.S.....	4
Stop fishing.....	5
Other	6

(please explain)_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	7%	5%
Sample Size (n=)	214	320

The purpose of Question 12 was to determine how anglers would respond to a decline in fishing success. However, the amount of decline that would prompt a change in fishing patterns was not quantified in the question. It may have been desirable to first attempt to quantify the level of decline that would cause a change in fishing patterns, and then to determine what type of pattern change that decline would cause.

13. In the opinion of the anglers of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important) and 3 (third most important).

	Rank (1-3)
1) Rainbow Trout.....	___
2) Yellowstone Cutthroat..	___
3) Brook Trout.....	___
4) Dolly Varden.....	___
5) Kokanee.....	___
6) Mountain Whitefish.....	___

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	9%	3%
Sample Size	n=228	n=354

Percentage Of Respondents Who Answered the Question Incorrectly

	Coal Block	Cranbrook/Kimberley
	5%	6%
Sample Size	n=228	n=354

The responses to Question 13 provide information on the species anglers considered most important for receiving attention for habitat restoration and enhancement. However, the relative importance of different species to lake anglers versus stream anglers cannot be determined, e.g. rainbow trout are typically fished in lakes, while cutthroat trout are typically fished in streams.

14. Who do the anglers of your household think should fund habitat restoration and enhancement projects?

_____

How do the anglers of your household think these funds should be raised?

_____

	Coal Block	Cranbrook/Kimberley
a	23%	21%
b	30%	24%
Sample Size	n=228	n=354

It is interesting to note that over one-fifth of the respondents to both parts of the question either did not answer them or answered them incorrectly. Public attitudes may have been better determined if options had been provided with the question.

15. If it is determined that harvest must be controlled to maintain fish populations, even after habitat restoration and enhancement activities have been carried out, which three options would the anglers of your household prefer? Please rank your answers 1 (most preferred) to 3 (least preferred).

Options	Rank (1-3)
1) Restrict fishing seasons	___
2) Restrict gear types	___
3) Reduce catch and possession limits	___
4) Establish size limits	___
5) Close areas on alternate years to allow natural stocks to rebuild	___
6) Limit road access	___
7) Other	___
(please explain)_____	

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	7%	6%
Sample Size	n=228	n=354

Percentage of Respondents Who Answered the Question Incorrectly

	Coal Block	Cranbrook/Kimberley
	5%	6%
Sample Size	n=228	n=354

The purpose of Question 15 was to determine which of several fisheries management options are acceptable to resident anglers for harvest control. "Other" options for harvest control that were provided by the respondents included "restrict non-resident anglers" and "increase fees for non-resident anglers." It may have been worthwhile to have designed a separate question to assess resident anglers' attitudes towards other anglers from the region, other B.C. resident anglers, non-resident Canadian anglers, and non-resident alien anglers.

HUNTING QUESTIONNAIRE

3. Why do the members of your household hunt in the Kootenay Region?

_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	7%	8%
Sample Size	n=136	n=204

Question 3 could have been separated into two questions: "Why do you hunt?" and "Why do you hunt in the Kootenay Region?," with options provided.

4. a) Please circle all the species that members of your household hunted in the Kootenay Region (Map 1) during the past year.
b) Success rate refers to the number of days required to harvest an animal. Please indicate your households's level of satisfaction with your current success rates for each of the species you hunted. Circle whether you are satisfied, somewhat satisfied, or dissatisfied with your success rates.

a) Species that you hunted (Circle)		b) Levels of Satisfaction		
		Satisfied	Somewhat Satisfied	Dissatisfied
Elk	01	1	or 2	or 3
Moose	02	1	or 2	or 3
White-tailed Deer	03	1	or 2	or 3
Mule Deer	04	1	or 2	or 3
Sheep	05	1	or 2	or 3
Goat	06	1	or 2	or 3
Black Bear	07	1	or 2	or 3
Grizzly Bear	08	1	or 2	or 3
Cougar	09	1	or 2	or 3
Waterfowl	10	1	or 2	or 3
Upland Game Birds	11	1	or 2	or 3

Percentage of Respondents Who did Not Answer

	Coal Block	Cranbrook/Kimberley
	5%	9%
Sample Size	n=136	n=204

The purpose of Question 4 was to assess hunters' satisfaction with their success rates for various species. No attempt was made to quantify the hunters' present success rates. It may have been desirable to omit the "somewhat satisfied" option, as it is an ambiguous category.

5. *You will need to use Maps 1 and 2 to answer this question.*

Please indicate the number of days members of your household hunted each species in each zone. For example, if 4 people from your household hunted mule deer two days in Zone 5 and three days in Zone 7 you would put '8' (4 people x 2 days) in the Zone 5 column and '12' (4 people x 3 days) in the Zone 7 column on the "Mule Deer" row. (See example)

ZONE

SPECIES	1 Upper Elk	2 Lower Elk	3 Michel	4 Wigwam	5 Flat-head	6 Lower Trench	7 Bull R.	8 Rest of Region
Example-*Mule Deer*					*8*		*12*	
Elk								
Moose								
White-tailed Deer								
Mule Deer								
Mountain Sheep								
Mountain Goat								
Black Bear								
Grizzly Bear								
Cougar								
Waterfowl								
Upland Game Birds								

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	8%	15%
Sample Size	n=136	n=204

The purpose of Question 5 was to quantify the number of days resident hunters sought each of several wildlife species in specific geographic areas within the Kootenay Region. Unfortunately, this question was not designed in such a way that it could be compared with the annual resident hunting survey conducted by the Fish and Wildlife Branch. In addition, the estimated number of days spent hunting by Coal Block and Cranbrook/Kimberley hunters in the Kootenay Region could not be determined due to the fact that hunters may have sought more than one species on the same outing, and/or hunted in more than one zone on the same outing.

6. What would the hunters from your household do if the chance of bagging a big game animal in the zones in which you usually hunt decreased? Circle only one response.

	Circle (one response only)
Continue to hunt in the same areas.....	1
Hunt the same species elsewhere in the Kootenay.....	2
Hunt same species elsewhere in B.C.....	3
Change from hunting big game to hunting small game, upland game birds, or waterfowl.....	4
Stop hunting.....	5
Enjoy only the non-hunting use of wildlife.....	6
Other (please explain)_____	7

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	4%	5%
Sample Size	n=136	n=204

The purpose of Question 6 was to determine how hunters would respond to a decline in hunting success. The amount of decline that would prompt a change in hunting patterns was not quantified in the question.

7. In the opinion of the hunters of your household, which three species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? Please rank your answers 1 (most important), 2 (second most important), 3 (third most important).

	Rank (1-3)
1. Elk.....	___
2. Moose.....	___
3. White-tail Deer.....	___
4. Mule Deer.....	___
5. Mountain Sheep.....	___
6. Mountain Goat.....	___
7. Black Bear.....	___
8. Grizzly Bear.....	___
9. Cougar.....	___
10. Waterfowl.....	___
11. Game Birds.....	___

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	3%	6%
Sample Size	n=139	n=216

Percentage of Respondents Who Answered the Question Incorrectly

	Coal Block	Cranbrook/Kimberley
	8%	9%
Sample Size	n=139	n=216

The species list provided with Question 7 includes species whose habitat cannot be readily restored or enhanced with present technology e.g. mountain goat, grizzly bear, and, in certain cases, mountain sheep. The choice of one or more of these species for habitat restoration and enhancement may be interpreted in two ways, either:

1. The respondent was unaware that habitat restoration and enhancement are not as viable as protection, or,

2. The respondent was aware of this, and the choice reflects a desire to see critical habitat protected.

8. Who do you think should fund habitat restoration and enhancement projects?

_____

_____

How do you think these funds should be raised?

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
a	10%	13%
b	23%	19%
Sample Size	n=139	n=216

Public attitudes on this subject may have been better determined if options had been provided with the question.

9. If it is determined that harvest must be controlled to maintain wildlife populations, even after habitat restoration and enhancement activities have been carried out, which three options would the hunters of your household prefer? Please rank your answers 1 (most preferred) to 3 (third most preferred).

	Rank (1-3)
1. Reduce length of hunting season.....	___
2. Reduce bag limits.....	___
3. Establish quotas for residents (e.g. limited entry hunts).....	___
4. Decrease quotas for non-residents (e.g. 1 animal every 5 years, 1 animal in a lifetime).....	___
5. Temporary hunting closures.....	___
6. Permanent hunting closures.....	___
7. Limit road access.....	___
8. Other	___

(please explain)_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	7%	5%
Sample Size	n=139	216

Percentage of Respondents Who Answered the Question Incorrectly

	Coal Block	Cranbrook/Kimberley
	2%	6%
Sample Size	n=139	n=216

The purpose of Question 9 was to determine which of several wildlife management options are acceptable to resident hunters. The option that was most frequently chosen for harvest control was to decrease quotas for non-residents. Obviously, that is the one option which would affect resident hunters the least. In addition, its choice may reflect resident hunters' attitudes towards other hunters more than their opinions on how to control wildlife harvest.

As noted in the hunting chapter, the ratio of non-resident to resident harvest in the Kootenay Region for all but animals hunted for trophy is low. It may have been worthwhile to have designed a separate question to assess resident hunters' attitudes towards other hunters from the region, other B.C. resident hunters, non-resident Canadian hunters, and non-resident alien hunters.

NON-HUNTING USE OF WILDLIFE QUESTIONNAIRE

2. Which big and small game species do the viewers of your household most enjoy? Please circle up to three big game animals and up to three small game animals.

Big Game	Circle (up to 3 only)	Birds/Small Game	Circle (up to 3 only)
Elk	1	Upland Game Birds (e.g. grouse, pheasant, quail)	1
Moose	2	Waterfowl (e.g. ducks, geese)	2
Deer	3	Raptors (e.g. hawks, eagles)	3
Mountain Sheep	4	Song Birds	4
Mountain Goat	5	Other (please explain)	5
Black Bear	6	_____	
Grizzly Bear	7	_____	
Cougar	8	_____	

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
a	8%	6%
b	20%	11%
Sample Size	n=153	n=310

The options provided for "small game animals" are all birds; no small game animals are listed.

3. **Approximately how many days did the viewers of your household enjoy each of the following non-hunting uses of wildlife in the past year?**

	No. of days in past year
Photographing.....	
Drawing/Painting.....	
Viewing/Watching	
Nature Study	
Other.....	

(please explain)_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	3%	7%
Sample Size	n=153	n=310

The purpose of Question 3 was to quantify how many days in 1980 Coal Block and Cranbrook/Kimberley residents spent enjoying the non-hunting use of wildlife, as well as to identify which non-hunting uses were the most popular. When the results of Question 3 were analyzed, only the non-hunting days generated by residents who made a special effort to view, draw or photograph wildlife in 1980 (determined from the results of Question 5) were calculated. This was done because it was felt that only those respondents who made a special effort to participate represented "recreational" non-hunting use of wildlife (as opposed to "everyday" or "chance" viewing). The figures thus exclude the non-hunting days spent by residents who view wildlife as part of their daily activities.

5. How often did the members of your household make a special effort to view, draw, or photograph wildlife in the past year?

	Circle	
About once per week or more.....	1	
About once per month	2	
About once per season.....	3	
Never.....	4	(Skip to Q.7)

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	5%	6%
Sample Size	n=153	n=310

A more accurate estimate of non-hunting activity days may have been obtained by reversing the order of Questions 3 and 5. In other other words, day-use estimates would only be obtained from those viewers who made a special effort to participate in non-hunting use.

9. How do you think opportunities for non-hunting use of wildlife should be improved? Please circle the options you would most like to see implemented.

	Circle
Construction of road pull-offs and viewing stands.....	1
Creation of small no hunting areas (to allow year-round viewing).....	2
Strictly control dogs and snowmobiles during winter months to reduce harassment.....	3
Other	4

(please explain)_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	2%	1%
Sample Size	n=106	204

The two options most Coal Block and Cranbrook/Kimberley viewers chose for improving opportunities for the non-hunting use of wildlife were the creation of small no hunting areas (to allow year-round viewing) and the strict control of dogs and snowmobiles during winter months to reduce the harassment of wildlife. The inclusion of these options may have introduced a bias to the question. For example anti-hunting sentiments may have increased the number of responses to the option of creating no hunting areas. The number of answers to the second option, strict control of dogs and snowmobiles during winter months, may have been compounded by snowmobilers who want dogs controlled or by dog owners who want snowmobile use controlled.

A comparison was made between this question and Question 4, favourite seasons for the non-hunting use of wildlife. Of those Coal Block and Cranbrook/Kimberley viewers who chose the strict control of dogs and snowmobiles during winter for improving non-hunting use opportunities, 85% and 90%, respectively, indicated that their favourite season for enjoying non-hunting use is a season other than winter. Of the Coal Block and Cranbrook/ Kimberley viewers who chose the creation of small no hunting areas, 75% and 68%, respectively, indicated that seasons other than autumn (hunting season) were their favourite for viewing.

Table 95
Options for Improving Opportunities for the Non-Hunting Use of Wildlife by Favourite Season for Enjoying the Non-Hunting Use of Wildlife

I COAL BLOCK

Options For Improving Opportunities	Favourite Season For Non-Hunting Use			
	Winter	Spring	Summer	Autumn
Strictly Control Dogs and Snowmobiles During Winter (Sample Size n=59)	15%	32%	27%	25%
Creation of Small No Hunting Areas (Sample Size n=52)	5%	35%	37%	25%
Contruction of Road Pull-Offs and Viewing Stands (Sample Size n=32)	16%	25%	31%	28%

II CRANBROOK/KIMBERLEY

Options For Improving Opportunities	Favourite Season For Non-Hunting Use			
	Winter	Spring	Summer	Autumn
Strictly Control Dogs and Snowmobiles During Winter (Sample Size n=143)	10%	24%	40%	25%
Creation of Small No Hunting Areas (Sample Size n=106)	7%	25%	37%	32%
Contruction of Road Pull-Offs and Viewing Stands (Sample Size n=58)	7%	21%	45%	28%

Population growth and further resource development in the Kootenays will result in increased pressures on wildlife populations. In an attempt to provide enough hunting opportunity to meet demand, two types of wildlife management programs could be considered. These programs are 1) habitat restoration (eg rehabilitation of disturbed habitat, government purchase of prime wildlife habitat), and 2) enhancement (e.g. prescribed burning and planting of browse species).

The phrase "In an attempt to provide enough hunting opportunity to meet demand..." implies that hunting is the primary use of concern. This may have alienated those viewers who have anti-hunting sentiments. The word hunting should have been omitted from the sentence to avoid the potential alienation of those respondents.

10. Which 3 species should receive the most attention for habitat restoration and enhancement in the Kootenay Region? (Map 1) Please rank your answers 1 (most important), 2 (second most important), 3 (third most important).

	Rank (1-3)
01) Elk	___
02) Moose	___
03) Deer	___
04) Mountain Sheep	___
05) Mountain Goat	___
06) Black Bear	___
07) Grizzly Bear	___
08) Cougar	___
09) Waterfowl	___
10) Game Birds	___

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
	12%	13%
Sample Size	n=153	n=310

Percentage of Respondents Who Answered the Question Incorrectly

	Coal Block	Cranbrook/Kimberley
	8%	4%
Sample Size	n=153	n=310

The species list provided with Question 10 includes species whose habitat cannot be readily restored or enhanced with present technology e.g. mountain goat, grizzly bear, and, in certain cases, mountain sheep. The choice of one or more of these species for

habitat restoration and enhancement may be interpreted in two ways, either:

1. The respondent was unaware that habitat restoration and enhancement are not as viable as protection, or
2. The respondent was aware of this, and the choice reflects a desire to see critical habitat protected.

11. Who do you think should fund habitat restoration and enhancement projects?

_____

_____

How do you think these funds should be raised?

_____

_____

Percentage of Respondents Who Did Not Answer

	Coal Block	Cranbrook/Kimberley
a	14%	17%
b	26%	25%
Sample Size	n=153	n=310

It is interesting to note that over 10% of the respondents did not answer the first part of the question, and over 25% did not answer the second part. Public attitudes may have been better determined if options had been provided with the question.

E.4 Survey Techniques

E.4.1 Telephone Survey

1. A final copy of the telephone questionnaire was not circulated for review by others involved in the preparation of the study. This oversight resulted in the interviewer asking whether members of the respondent's household had "hunted or viewed wildlife" rather than treating these as two distinct activities, as was done in the mail survey.

2. Since the only copy of the questionnaire available is the abbreviated format which appeared on the screen of the video display terminal, it is suspected that the interviewer may not have paid strict attention to the necessity of phrasing the questions in exactly the same way to all respondents.

3. All calls were placed from Victoria and were direct-dialed through B.C. Tel. Use of the Provincial Government tel-pak lines could have reduced the costs considerably. While tel-pak lines are frequently difficult to use during the day, they could likely have been successfully used for the evening calls.

E.4.2 Mail Survey

1. Shortage of staff during the period in which the telephone survey was being conducted prohibited immediate implementation of the mail survey. As a result, questionnaires were not mailed until the middle of December, the post office's busiest time of the year. Many questionnaires were therefore received during the week preceding Christmas, when many people may have been too busy to complete them, or were not received until long after Christmas. In some cases, questionnaires may not have been received until two to three months after the original telephone contact. This delay may have caused a lower response

to the survey than would have been obtained if the questionnaires had been mailed soon after the telephone interview, when interest in the survey was high.

2. The appearance of the mail survey package may have affected respondents' willingness to complete the questionnaires. The package consisted of a letter, a map, up to four questionnaires, and a business reply envelope. It may have appeared to require a substantial length of time to complete.

3. Other factors which may have affected the response to the survey include:

   (a) the impersonal nature of the cover letters, i.e. they were addressed to "Kootenay resident" rather than to individuals, and were xerox copies rather than individually-signed copies.

   (b) the use of xeroxed address labels on the envelopes rather than individually addressed labels.

   (c) the lack of an explanation of the purpose of the identification numbers on the questionnaires.

   (d) the lack of assurance of the confidentiality of all replies.

4. The map which was enclosed with each package was difficult to read. The difference between "Map 1" and "Map 2" was confusing, partly due to the size of the lettering used to label each. Some respondents enclosed a note with their questionnaire, saying "did not receive Map 1", even though the two maps were printed on the same sheet. In addition, Map 1 did not show the location of Kimberley, even though it did locate Cranbrook and Nelson.

E.5 Data Preparation

1. The questionnaires included several open-ended questions, which required manual coding, a time-consuming procedure. In addition, some questions had to be recoded because all possible options were not initially considered. In some cases, providing a list of options from which to choose may have been more appropriate.

2. No separate code number was used to distinguish between a blank and a zero, i.e. non-response to the entire question and a response of '0'.

3. In some questions, not enough columns were provided to properly code the responses, e.g. in Question 1 of the outdoor recreation questionnaire, columns were allotted to code the number of days spent in an activity, but several respondents indicated they had participated for 100 days or more. Consequently, the Code '98' was used to indicate "98 days or more". Because of this oversight, the total number of days spent in these activities may not represent the actual total indicated by the respondents.

4. Editing of the data after the initial frequency distributions had been produced was a time-consuming task, due to a number of keypunching errors, and due to the problem of distinguishing between non-responses and zero responses.

E.6 Representativeness of the Sample

In survey research, a sample is often used as a substitute for the population. If it is to be a representative sample, it must closely represent the population for independent variables such as age, gender, income, education, etc. The representativeness of a sample can be determined by comparing sample data (socio-economic) with census data. Such data were not collected in the telephone survey.

Socio-economic data were, however, collected in the mail questionnaire on outdoor recreation (Question 16). The data obtained from the mail questionnaire are only representative of respondents who participated in outdoor recreation in 1980. A comparison of selected socio-economic variables for these respondents are compared to 1976 census data, the most recent data available, in Table 96. As the table indicates, the sample of participants is fairly representative of the population. Weighting of the data was not performed because socio-economic data were not available for both participants and non-participants.

Table 96

Comparison of Sample Data with 1976 Census Data

Characteristic	Coal Block		Cranbrook/Kimberley	
	Sample	1976 Census*	Sample	1976 Census*
Gender				
Males	587(50.4%)	5,840(52.4%)	736(52.9%)	10,435(50.6%)
Females	578(49.6%)	5,300(47.6%)	656(47.1%)	10,190(49.4%)
Age Groups				
Under 15	376(32.3%)	3,485(31.4%)	389(27.9%)	5,665(27.5%)
15-64	775(66.5%)	7,086(63.8%)	933(67.0%)	13,490(65.4%)
65 and over	14 (1.2%)	544 (4.9%)	70 (5.1%)	1,470 (7.1%)
Household Size	3.6	3.2	3.1	3.1
Population				
Coal Block	1165	11,128		
Elkford	194(16.7%)	1,870(16.8%)		
Elko	43 (3.7%)	600 (5.4%)		
Fernie	536 (46.0%)	4,608 (41.4%)		
Sparwood	392 (33.6%)	4,050 (36.4%)		
Cranbrook/ Kimberley			1,392	20,621
Cranbrook			805(57.8%)	13,510(65.5%)
Kimberley			587(42.2%)	7,111(34.5%)

* Source: Province of British Columbia, Ministry of Economic Development, British Columbia Regional Index, 1978.

Note: Due to rounding, census totals may not balance.

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